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THE ABRIDGMENT.

M E S S A G E

FROM THE

PRESIDENT OF THE UNITED STATES

TO THE

TWO HOUSES OF CONGRESS

AT THE BEGINNING OF THE

THIRD SESSION OF THE FIFTY-FIFTH CONGRESS,

WITH THE

REPORTS OF THE HEADS OF DEPARTMENTS

AND

SELECTIONS FROM ACCOMPANYING DOCUMENTS.

VOLUME II.

EDITED BY

CLERK OF JOINT COMMITTEE ON PRINTING.

WASHINGTON:

GOVERNMENT PRINTING OFFICE,

1899,

695098

THE NEW YORK PUBLIC LIBRARY
ASTOR LENOX TILDEN FOUNDATION
1895

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REPORT
OF THE
SECRETARY OF THE NAVY.

NAVY DEPARTMENT,
Washington, November 15, 1898.

The PRESIDENT.

SIR: Since my last annual report the Navy has, for the first time since its rehabilitation, been put to the supreme test of war. Years of patient, persistent training and development had brought it to a point of high efficiency, which resulted in the unparalleled victories at Manila and Santiago—victories which have given the names of our naval commanders world-wide fame, and added an additional page to the glorious naval history of our country.

It is not possible in the space of an annual report to state in detail the operations of the Navy in the recent war, or do justice to the conspicuous gallantry of its officers and men. Only a brief summary of the appendices which accompany this report can be given.

THE WAR.

Throughout the year 1897 the vessels on the North Atlantic Station were busily engaged in enforcing the observance of our neutrality laws, and the Department exercised all possible vigilance and activity in that regard. At the same time the condition of affairs in Cuba and the consequences to the United States and Spain made it evident that war might come between them.

The Department, recognizing this fact, on the 11th of January last directed the commander in chief of the European Station to retain those men whose terms of enlistment were about to expire. The *Helena*, then on her way to the Asiatic Station, was directed to proceed to Lisbon and there await further orders. The commander in chief of the South Atlantic Station was informed of the critical condition of affairs in Cuba, and was directed to proceed with the *Cincinnati* and *Castine* from Montevideo to Para on the north coast of Brazil.

On January 24 the *Maine* was ordered to Havana, Cuba. This was the first visit of a vessel of the United States Navy to any port in Cuba for several years, although the necessity of protecting American interests made the presence of our flag in Cuban ports desirable.

On February 15, at 9.40 p. m., this noble battle ship was blown up in Havana Harbor, and two hundred and sixty-six lives were lost. The news of this appalling catastrophe was communicated in the following dispatch from the commanding officer.

HAVANA, February 15, 1898.

SECRETARY OF THE NAVY,

Washington, D. C. :

Maine blown up in Havana Harbor at 9.40 to-night, and destroyed. Many wounded and doubtless more killed or drowned. Wounded and others on board Spanish man-of-war and Ward Line steamer. Send light-house tenders from Key West for crew and the few pieces of equipment above. No one has clothing other than that upon him. Public opinion should be suspended until further report. All officials believed to be saved. Jenkins and Merritt not yet accounted for. Many Spanish officers, including representatives of General Blanco, now with me to express sympathy.

SIGSBEE.

This judicious telegram did much to secure in the public mind a dispassionate view of the disaster. A board of inquiry, appointed to report to the Department the cause of the explosion, proceeded to Havana and began its investigation February 21.

After an exhaustive examination of the wreck, and after taking the testimony of witnesses and of experts, the board reported on the 21st of March that the *Maine* had been destroyed by the explosion of a submarine mine, but that it was unable to fix the responsibility upon any person or persons. It was evident that the cause of the disaster must have been from the outside.

Meantime the commander in chief of the European Station was instructed to attach the *Albany* and *New Orleans*—then purchased in England of the Brazilian Government—to his command, and bring the latter, the other being unfinished, to the United States. The Commander in Chief of the Asiatic Squadron was ordered to assemble his squadron at Hongkong. The *Olympia*, under orders at that time to San Francisco, was retained on the Asiatic Station. The *Oregon* was ordered to proceed from Bremerton, Wash., to San Francisco and prepare for a long voyage.

Commanders in Chief of stations were ordered to husband ammunition and to keep their vessels filled with the best coal obtainable. Enlistments, even in excess of the established quota, were ordered, to fill the complements of men for the *Columbia*, *Minneapolis*, *Miantonomoh*, and other vessels. The North Atlantic Fleet was greatly strengthened, and vessels were concentrated in the neighborhood of Key West. The Flying Squadron was organized, under command of Commodore W. S. Schley, and stationed at Fortress Monroe for the protection of any point on the coast which might be menaced by a Spanish fleet.

On the 9th of March Congress passed the emergency bill appropri-

ating \$50,000,000 for national defense, and the Department at once took steps to secure auxiliary vessels. On the 12th of March a board was appointed and directed to make thorough examination of such vessels as might be desirable for purchase. Purchases were made upon the recommendation of the board; the vessels bought were at once sent to the different navy-yards and private yards; the changes necessary to fit them for naval purposes were pushed forward with the utmost dispatch, and the purchase of ammunition, guns, and all classes of naval war material went rapidly on.

The commander in chief of the Asiatic Station and the commander in chief of the North Atlantic Station had been engaged in thoroughly preparing the units of their commands for the test of war. The squadrons, ships, officers, and crews were in admirable condition and training, had been for months engaged in tactical maneuvers and gunnery practice, and were strengthened by the addition of the auxiliary vessels as rapidly as converted. The bureaus of the Department had, by wise forethought, prepared them with every facility in the way of men, supplies, ammunition, information, and drills, and as early as April 15, four weeks before Admiral Cervera's fleet reached Cuban waters, the Navy of the United States was ready for the outbreak of hostilities. The North Atlantic fleet at Key West covered Cuba; the Flying Squadron at Hampton Roads stood ready to defend our own coast, or to threaten that of Spain, and the Asiatic Squadron at Hongkong only awaited information of the outbreak of hostilities.

On the 19th of March the *Oregon* left San Francisco for Callao, Peru. The Department issued orders to the *Marietta*, then at San Jose de Guatemala, to precede her, in order to arrange for coal and to facilitate in every way possible the passage of this powerful vessel to reinforce the fleet in the North Atlantic. From Callao she proceeded to Valparaiso, then to Sandy Point, Patagonia, and arrived at Rio Janeiro on April 30, at which point the Department advised the commanding officer of the declaration of war and of the sailing of the Spanish fleet from the Cape de Verde Islands on April 29. She arrived off Jupiter Inlet, Florida, on the 24th day of May, in good condition and ready for service, and was ordered to Key West, where, after coaling, she took her place with the blockading squadron and became a part of the command of Admiral Sampson.

In order to provide for the protection of the Atlantic coast between the capes of the Delaware and Bar Harbor, Maine, the Northern Patrol Squadron was organized, and was placed under the command of Commodore J. A. Howell on April 20. This squadron consisted of the *San Francisco* (flagship), *Prairie*, *Dixie*, *Yankee*, and *Yosemite*. At various times there were also attached to it the *Columbia*, *Minneapolis*, *Badger*, and *Southery*.

On April 21 Congress declared war. Admiral Sampson, in command of the North Atlantic Fleet, which had been engaged during the

or six preceding months in gunnery and tactical practice off Florida, was at once ordered to blockade that part of the northern coast of Cuba extending from Cardenas to Bahia Honda. At 6.30 a. m. on April 22 the admiral sailed on that errand.

ASIATIC SQUADRON.

On the 24th of April the following telegram was sent by the Department to Commodore Dewey, in command of the Asiatic Squadron:

WASHINGTON, April 24, 1898.

DEWEY, *Hongkong* :

War has commenced between the United States and Spain. Proceed at once to the Philippine Islands. Commence operations at once, particularly against the Spanish fleet. You must capture vessels or destroy. Use utmost endeavors.

LONG.

On the 27th this squadron, composed of the *Olympia* (flag), *Baltimore*, *Raleigh*, *Petrel*, *Concord*, *Boston*, and *McCulloch*, sailed from Mirs Bay, China.

On the morning of May 1 it entered the harbor of Manila, successfully passing the forts and mine defenses guarding the entrance to the bay, and destroyed the Spanish fleet under the guns of the forts at Cavite.

The *Reina Christina*, *Castilla*, *Don Antonio de Ulloa*, *Don Juan de Austria*, *Isla de Luzon*, *Isla de Cuba*, *General Lezo*, *Marques del Duero*, *El Correo*, *Velasco*, and *Isla de Mindanao* (transport) were burnt or sunk, and the tugs *Rapido* and *Hercules* and several small launches were captured. Admiral Dewey has contracted for the raising of the *Cuba*, *Luzon*, and *Austria*, and this work is now in progress.

The Spanish loss, as given in the report of Admiral Montejo, was, including those at the arsenal, 381 men killed and wounded. Not a man was lost in our fleet, and but nine slightly wounded. No damage was done our ships.

This victory gave to our fleet the complete control of the bay of Manila. The naval station at Cavite was taken possession of and its fortifications were destroyed. The Admiral reported that the city could be taken at any time when a sufficient number of troops were on hand to hold it.

Aside from the mere fact of having won without the loss of a single life such a brilliant and electrifying victory at the very outset of the war, with all the confidence which it infused throughout the country and into the personnel of every branch of the service, it removed at once all apprehension for the Pacific coast. The indirect pecuniary advantage to the United States in the way of saving an increase of insurance rates and in assuring the country of freedom from attack on that coast is incalculable.

It was at once determined to reenforce the Asiatic Squadron and to send troops to take and occupy the city of Manila.

Early in June the *Charleston*, which had previously sailed from San Francisco, was joined at Honolulu by the chartered steamer *City of Peking*, and on the 4th sailed with her and with the army transports *Australia* and *City of Sydney* for Manila, carrying the first detachment of troops. The *Charleston* proceeded to Guam, one of the Ladrone Islands, arriving there June 20. Demand was made for the immediate surrender of the defenses of the island of Guam and all officials and persons in the military service of Spain. The surrender followed and the American flag was hoisted.

With a view to further reenforce the Asiatic Squadron, the *Monterey* sailed, with the collier *Brutus*, from San Diego on June 11, and the *Monadnock*, with the collier *Nere*, from San Francisco on June 25.

Admiral Dewey continued to exercise in the Philippines a wise discretion, which constantly strengthened the power of the United States in those islands, and on August 13, after the arrival of General Merritt, the city of Manila surrendered to the Army and Navy.

PACIFIC SQUADRON.

On July 27, 1898, Admiral J. N. Miller, U. S. N., commander in chief of the United States Naval Force on the Pacific Station, sailed from San Francisco, Cal., for Honolulu, to participate in the ceremonies attending the assumption of sovereignty by the United States over the Hawaiian Islands. The *Philadelphia* arrived at Honolulu on August 3, joining the U. S. S. *Mohican* already at that port. On the 12th of the same month, the date set for the transfer of the islands to the United States, the officers of the *Philadelphia* and *Mohican*, and a force under arms from those vessels, represented the Navy at the ceremonies.

NORTH ATLANTIC FLEET.

This fleet was under the command of Admiral Montgomery Sicard, U. S. N., until March 26, when it was found necessary, on account of his health, to relieve him from that onerous and exacting duty. Captain Sampson, the senior officer present, who was thoroughly familiar with the personnel and matériel of the fleet, and with all the arrangements which had been made preceding the actual outbreak of hostilities, was given command of the fleet, with the rank of rear-admiral.

The North Atlantic Fleet was composed of the blockading squadron, Commodore J. C. Watson commanding from May 6 to June 21; the First North Atlantic Squadron, Commodore J. C. Watson commanding from June 21 to June 27; Commodore J. A. Howell commanding from July 1, on which date the Northern Patrol Squadron became part of Admiral Sampson's command to the close of hostilities; the Flying Squadron, Commodore W. S. Schley commanding from May 24, upon which date it was placed under the orders of Admiral Sampson, to June 21, upon which date it ceased to exist; and the second North

Atlantic Squadron, Commodore W. S. Schley commanding from June 21 to the close of hostilities.

A squadron called the Eastern Squadron, Commodore J. C. Watson commanding from July 7 to September 20, was organized with the view of threatening the coast of Spain; but owing to the suspension of hostilities it did not proceed upon that duty.

In addition, Commodore George C. Remey, who was in command of the naval base at Key West, was directed, on June 21, to exercise command over all vessels within signaling distance, under the authority of Admiral Sampson.

During the entire period of hostilities a portion of this fleet was engaged in the blockade of the coast of Cuba.

On April 29 Admiral Cervera's fleet, composed of the armored cruisers *Cristobal Colon*, *Vizcaya*, *Almirante Oquendo*, and *Infanta Maria Teresa*, and the torpedo gunboats *Furor*, *Terror*, and *Pluton* sailed from the Cape de Verde Islands.

As its destination was uncertain, Admiral Sampson sailed east with a portion of the fleet under his command for the purpose of observation. He left Key West on the 4th of May in the flagship *New York*, and off Havana picked up the *Iowa*, *Indiana*, and *Detroit*. On the way east he was afterwards joined by the monitors *Terror* and *Amphitrite* and the *Montgomery*, *Porter*, *Wompatuck*, and collier *Niagara*.

At Cape Haitien on May 7, he received dispatches from the Department advising him that the Spanish squadron was reported at St. Thomas, West Indies. Instructions were also received that the vessels accompanying him were not to be risked or crippled in the bombardment of fortifications, as it was considered unwise to risk any of the vessels of our Navy until the Spanish fleets had been met and destroyed. Continuing eastward in the hope of finding the enemy at San Juan, Porto Rico, he found it necessary, on account of the small coal supply of the monitors, to take them in tow, and the squadron did not arrive off San Juan until the morning of the 12th. A bombardment of that place followed for two hours and a half, but as there was no land force to hold it in case of its surrender, and as the Spanish fleet was not there, it was determined to return to Havana, where it was possible Cervera might have gone.

While the squadron was on its return the following dispatch was received:

The Spanish fleet from Cape Verde Islands off Curaçao, West Indies, May 14. Flying Squadron en route Key West, Florida. Proceed with all possible dispatch to Key West.

Meantime the *St. Louis*, which had joined the squadron, was ordered to proceed to Santiago and Guantanamo for the purpose of cutting cables; to Ponce, Porto Rico, for the same purpose, and thence to St. Thomas to wait orders. This work was bravely done under exposure to the enemy's fire.

On the morning of May 17 the flagship left the squadron in the

Bahama Channel and proceeded to Key West. That afternoon the *Du Pont* was met with a dispatch from the Department stating that the Spanish fleet had munitions of war destined for the defense of Havana, and was under imperative orders to reach Havana, Cienfuegos, or a port connected with Havana by rail; and that as Cienfuegos appeared to be the only port fulfilling the conditions, the Flying Squadron would be instructed upon arrival at Key West to proceed to Cienfuegos. Instructions were at the same time given to Admiral Sampson to increase the Flying Squadron by such armored ships as he might deem desirable.

On May 19 the Flying Squadron, composed of the *Brooklyn*, *Texas*, *Massachusetts*, and *Scorpion*, sailed from Key West for Cienfuegos with instructions to establish a blockade at that place as soon as possible.

On May 20 the *Iowa*, *Castine*, and the collier *Merrimac* sailed to join Commodore Schley's squadron off Cienfuegos. On this day the Department informed Admiral Sampson of a report that Cervera's squadron was at Santiago de Cuba, and advised him to order Commodore Schley to proceed off that port with the vessels under his command.

Admiral Sampson left Key West for the Havana blockade on the 21st, having previously sent the *Du Pont* with dispatches to Commodore Schley and ordered the *Marblehead* and *Eagle* to join the Flying Squadron. By the *Marblehead* orders were sent to Commodore Schley advising him that the Spanish squadron was probably at Santiago de Cuba and directing him, if he was satisfied that it was not at Cienfuegos, to proceed with all dispatch to Santiago de Cuba, and upon arrival there to establish communication with some of the inhabitants and ascertain definitely whether the ships were in port or not. The *Hawk* followed with duplicate dispatches which were delivered to Commodore Schley on the 23d.

On May 22 Admiral Sampson received a dispatch from Key West stating that Cervera's squadron was in the harbor of Santiago de Cuba on the morning of the 21st; also a telegram from the Department that it was expected to visit San Juan, Porto Rico, and if Commodore Schley found that it had left Santiago, he should follow it.

At 8 a. m. on the morning of the 23d Admiral Sampson left off Havana, sailing eastward, with a view to occupying Nicholas Channel in such manner as to prevent the approach of the Spanish squadron in that direction. The *Montgomery* joined him on the 24th, with dispatches stating that information had been received to the effect that Cervera's squadron had not left Santiago.

On the 26th Admiral Sampson received from Commodore Schley a letter dated May 23, stating that he was by no means satisfied that the Spanish squadron was not at Cienfuegos, and that he would, therefore, remain off that port with his squadron.

The *Wasp* was sent on May 27 to carry advices to Commodore Schley, informing him that daily confidential reports received at Key West from Havana stated that the Spanish squadron had been in Santi

Cuba from the 19th to the 25th, inclusive, and directing him to proceed with all possible dispatch to that port. At this time two telegrams dated Cienfuegos, May 24, were received by Admiral Sampson from Commodore Schley, stating that coaling off that port was very uncertain; that he had ascertained that the Spanish fleet was not in Cienfuegos, and would go eastward on the next day, the 25th, but that on account of short coal supply in ships he could not blockade if the Spanish squadron was in Santiago, but would proceed to the vicinity of Nicholas Mole, on the western coast of Haiti, from which point he would communicate.

Upon the receipt of this information Admiral Sampson at once decided to go to Key West for coal, and, if authorized by the Department, to proceed to Santiago in person. The *New Orleans* was instructed on this same day, May 27, to proceed as rapidly as possible to that port, in company with the collier *Sterling*, and with orders to Commodore Schley "to remain on the blockade at Santiago at all hazards, assuming that the Spanish vessels are in that port." This order further directed that the collier *Sterling* should be used to obstruct the channel leading into the harbor, and that in the meantime the utmost care should be exercised that none of the Spanish vessels in that port be allowed to escape. Admiral Sampson arrived at Key West on May 28 and cabled to Commodore Schley, advising him that the *New Orleans* would meet him off Santiago on May 29 with important dispatches, and further emphasizing the importance of immediate communication with persons ashore, in order to ascertain definitely whether or not Cervera's squadron was in the port of Santiago.

Commodore Schley left Cienfuegos on the evening of the 24th, and at 5.30 p. m. on the 26th reached a point 20 miles or more to the southward and eastward of Santiago, where the squadron stopped while repairs were made to the collier *Merrimac*. At 7.50 p. m. he signaled to the squadron, "Destination Key West, via south side of Cuba and Yucatan Channel, as soon as collier is ready. Speed, 9 knots." About 9 p. m. the squadron got underway, and after steaming to the westward until 11.20 p. m., stopped to make repairs to the *Yale*.

On the morning of the 27th the *Harvard*, from Mole St. Nicholas, delivered to Commodore Schley the following dispatch:

WASHINGTON, May 25, 1898.

HARVARD, St. Nicholas Mole, Haiti:

Proceed at once and inform Schley and also the senior officer present off Santiago as follows: All Department's information indicates Spanish division is still at Santiago. The Department looks to you to ascertain facts and that the enemy if therein does not leave without a decisive action. Cubans familiar with Santiago say that there are landing places 5 or 6 nautical miles west from the mouth of harbor, and that there insurgents probably will be found and not the Spanish. From the surrounding heights can see every vessel in port. As soon as ascertained notify the Department whether enemy is there. Could not squadron and also the *Harvard* coal from *Merrimac* leeward off Cape Cruz, Gonaives Channel, or Mole, Haiti? The Department will send coal immediately to Mole. Report without delay situation at Santiago de Cuba.

LONG.

At 11 a. m., two hours after receiving this dispatch from the Department, Commodore Schley signaled to the squadron, "Can you fetch into the port of Key West with coal remaining? Report by signal." At noon the *Harvard* left, carrying his reply to the Department's dispatch, as follows:

KINGSTON, May 28, 1898.

SECNAV, Washington:

* * * *Merrimac* engines disabled; is heavy; am obliged to have towed to Key West. Have been unable absolutely to coal the *Texas*, *Marblehead*, *Vixen*, *Brooklyn* from collier, all owing to very rough sea. Bad weather since leaving Key West. The *Brooklyn* alone has more than sufficient coal to proceed to Key West; can not remain off Santiago present state squadron coal account. Impossible to coal leeward Cape Cruz in the summer, all owing to southwesterly winds. * * * Much to be regretted, can not obey orders of Department. Have striven earnestly; forced to proceed for coal to Key West by way of Yucatan Passage. Can not ascertain anything respecting enemy positive. * * * Very difficult to tow collier to get cable to hold.

SCHLEY.

Later in the day, the squadron meantime having again moved westward, the signal "Stop" was made to the Flying Squadron, after which the *Texas* and *Marblehead* went alongside the *Merrimac* and coaled. The squadron was at that time distant about 40 miles to the southward and westward of Santiago.

The Flying Squadron remained here until 1.12 p. m. of the 28th, when signal was made to return in the direction of Santiago. This course was kept until a little after dark, when the squadron stopped for the night about 10 miles to the southward of Santiago, with the *Marblehead* scouting 2 miles inside the squadron.

Early on the morning of the 29th a Spanish man-of-war, the *Cristobal Colon*, was seen lying at anchor inside the harbor entrance, and later a second man-of-war and two smaller vessels. At 10 a. m. Commodore Schley cabled that Cervera's squadron was at Santiago. On the morning of the 31st with the *Massachusetts*, *Iowa*, and *New Orleans* he exchanged fire with the ships inside the harbor and the forts at a range of about 7,000 yards.

On June 1 Admiral Sampson arrived off Santiago and found Commodore Schley's squadron in column to the westward of the mouth of the harbor. Immediately upon the concentration of these two forces at Santiago a close and efficient blockade was established, Admiral Sampson in command. The harbor was closely guarded day and night by our ships in a semicircle. Powerful search-lights were thrown upon its entrance during the dark. A plan of attack, by which our vessels were to close in at once upon any of the enemy's coming out, was provided for in standing orders. On June 3 an attempt was made to close the harbor by sinking across its entrance the collier *Merrimac*. This attempt, though unsuccessful in its object, was daringly executed. It is now one of the well-known historic marvels of naval adventure and enterprise, in which Naval Constructor Hobson and his men won undying fame

On June 7 the *Marblehead* and *Yankee* took possession of the lower bay of Guantanamo as a harbor of refuge for the fleet, and on June 10 the first battalion of marines was landed there and went into camp. For three days and nights these men, supported by the *Marblehead* and *Dolphin*, fought almost constantly. The position which they defended was a most important one for the fleet, as it was necessary to have near at hand a harbor in which ships could be coaled and repaired in safety.

On June 15 the fort on Cayo del Toro in Guantanamo Bay was destroyed by the *Texas*, *Marblehead*, and *Suwanee*.

In May the Department advised Admiral Sampson of the intention of the War Department to send about thirty transports with troops from Tampa, Fla., to Santiago, and instructed him to provide a suitable convoy.

On June 4, in reply to a telegram from the Department asking if the convoy was ready, the commandant of the naval base at Key West stated, "Vessels all ready."

On June 8 information was received at Tampa, through the naval base at Key West, from two different sources, indicating the possible presence of a force of Spanish vessels in Nicholas Channel. The War Department was informed of this news, and orders were issued to Admiral Sampson to reenforce the convoying squadron by two armored vessels. On the next day the expedition was directed to proceed without regard to this information, as it was discredited both by Admiral Sampson and the Department, and the following telegram was sent:

WASHINGTON, June 9, 1898.

NAVAL BASE, Key West, Fla.:

* * * The expedition will proceed without reference to the Spaniards. Department will inform commander in chief North Atlantic Station and the War Department of this.

ALLEN, Acting Secretary.

A suitable convoy was retained at Tampa until the transports were ready. The Army expedition finally left Tampa on the 14th, this Department having rendezvoused additional vessels off Rebecca Shoals, where the transports arrived at 8 p. m. June 15, and thence proceeded to Santiago.

Upon arrival of the convoy off Santiago Admiral Sampson sent his chief of staff to communicate with General Shafter. The chief of staff took with him a chart of Santiago Harbor and explained to General Shafter that, in order to enable the vessels of the Navy to enter, it was necessary that the positions occupied by the eastern and western batteries of the enemy should be carried. The possession of these points insured the destruction of the mines, the entrance of the naval vessels, and an attack upon Admiral Cervera's squadron. To this plan General Shafter gave cordial assent. The landing place on which he finally decided was Daiquiri.

General Shafter reported to Admiral Sampson on June 22 his intention to commence the landing of troops, and Admiral Sampson at once put an officer in charge of the disembarkation, which was begun during the forenoon of the 22d by means of the steam launches and cutters from the ships of the squadron. The naval vessels shelled the coast about Daiquiri, and a demonstration was made at Cabanas to engage the attention of the enemy. All the troops were successfully landed by the boats of the navy, and the joint operations of the army and navy began, which finally resulted in the surrender of Santiago.

On July 1, in accordance with a request from General Shafter of June 30, the forts at Aguadores were bombarded and a demonstration made at the entrance of the harbor of Santiago, and on July 2 the batteries at the entrance of the harbor were heavily bombarded, especially the Punta Gorda battery by the Oregon and Indiana.

A report of this bombardment was sent to General Shafter, and Admiral Sampson stated that it was impossible to force an entrance to the harbor until the channel could be cleared of mines, which could only be done after the forts at the entrance of the harbor were taken by our troops.

General Shafter replied that it was not possible to say when he could take the batteries at the harbor's mouth, and urged that an effort be immediately made by the navy to force an entrance. Admiral Sampson wrote to General Shafter that the forts which had been bombarded by the squadron could not inconvenience the army in capturing the city, as they could not fire except to seaward; that as the channel to the harbor was strewn with observation mines an effort to force an entrance would result in the sinking of one or more naval vessels and in closing the entrance to the harbor; but that if it was desired that the navy should attempt to force the entrance he would at once prepare to undertake it, although he had hoped that an attack by the army on the shore batteries from the rear would leave the navy at liberty to drag the channel for torpedoes.

On the morning of July 3, an interview having been prearranged between General Shafter and Admiral Sampson, the latter, in the flagship *New York*, left the fleet for Siboney. When the flagship was about 4 miles east of her blockading station, and about 7 miles from the Morro, the Spanish squadron was seen steaming out of the harbor entrance. This was at 9.30 a. m. The vessels of the blockading squadron were, as usual, in their designated positions, making a semicircle about the harbor entrance, counting from the eastward in the following order: *Indiana*, *Oregon*—the *New York's* place being between these two—*Iowa*, *Texas*, and *Brooklyn*. The *Massachusetts* had gone that morning to Guantanamo for coal. The *Gloucester* and *Vixen* lay to the eastward and westward of the harbor entrance, close to the land. The torpedo boat *Ericsson* was in company with the flagship.

Admiral Cervera's squadron came out of the harbor in the following order: *Infanta Maria Teresa*, *Vizcaya*, *Cristobal Colon*, *Almirante*

Oquendo, and the torpedo-boat destroyers *Pluton* and *Furor*. The *New York* turned and steamed for the escaping fleet, flying the signal to close in toward the harbor entrance and attack vessels, but our ships had already, in accordance with standing orders, at once engaged the Spanish ships with the utmost spirit and vigor, and in the course of a running fight, which continued until 1.20 p. m., the latter were completely destroyed and sunk, and the famous victory, with its splendid credit to officers and men, was won. The casualties on our side were 1 man killed and 10 wounded, most of them in the drum of the ear by the concussion caused by the guns. Our ships suffered no injury of any account. Admiral Cervera, about 70 officers, and 1,600 men were made prisoners, while about 350 Spaniards were killed or drowned and 160 wounded. These estimates are probably considerably below the actual numbers. Many of the enemy were rescued from their sinking ships by our men. The prisoners, except the officers, who were sent to Annapolis, were brought to Portsmouth, N. H., and kept in Camp Long, on Seavey's Island in the harbor of that city until they were released. During this time they were fed and clothed and comfortably cared for. There was little sickness, and the wounded and ailing soon recovered under good treatment.

On July 4, at night, the Spanish cruiser *Reina Mercedes*, which had not left Santiago with Cervera's squadron, was seen steaming out of the harbor. She was sunk just before reaching the narrow part of the entrance channel, presumably by the fire of the *Massachusetts* and *Texas*. The object of this maneuver is still in some doubt, but it had the effect of further obstructing the channel.

On July 5 the Department telegraphed to Admiral Sampson that the President had issued the following order:

General Shafter and Admiral Sampson should confer at once for cooperation in taking Santiago.

General Shafter immediately requested Admiral Sampson to come to him for conference. On the next day Admiral Sampson, being ill, sent his chief of staff, who had a conference with General Shafter, in which it was arranged that in case the Spanish commander refused the second demand for surrender, a continued bombardment of Santiago should be begun by the fleet on the 9th; that, if this was not sufficient, there should be an assault on the Socapa battery by the marines and Cuban forces, and an effort made by some of the smaller ships of the squadron to enter the harbor.

On July 10 the squadron, complying with the request of General Shafter, began a further bombardment of Santiago. This was continued on the 11th. At 12 m. General Shafter signaled:

Please continue firing with heavy guns until 1 o'clock, and then cease firing until further orders.

At 4.45 p. m. the *Brooklyn* reported to the flagship:

General Shafter states that fire from ships very accurate, shell falling in city; *lines have been advanced*. Flag of truce went forward to demand unconditional

surrender. Will communicate with you fully directly to Aguadores as to time of firing and result of truce.

On July 12 the admiral received a dispatch from General Shafter stating:

My lines are now complete to the bay north of Santiago. Your shots can be observed from there perfectly, at least those that fall in the town. Flames followed several shots fired to-day.

At 8.10 p. m. General Shafter signaled:

A truce now exists and will probably continue all day to-morrow, the 13th.

On July 13, at 9.05 a. m., Admiral Sampson signaled to General Shafter:

As commander-in-chief of the naval forces engaged in joint operations, I expect to be represented in any conference held to arrange the terms of surrender of Santiago, including the surrender of the shipping and the harbor. Questions are involved of importance to both branches of the service.

This was replied to at 2.40 p. m. by General Shafter, as follows:

I shall be glad to have you represented, but difficult to let you know. Conference may take place at any hour. . . .

At 1.15 p. m., on the 14th, General Miles telegraphed to Admiral Sampson:

I will be glad if you will send to these headquarters an officer to represent you during negotiations for evacuation.

At 1.38 p. m. General Miles was replied to:

When do you want Admiral Sampson's representative there?

At 2.23 p. m., before any arrangement could be made by which Admiral Sampson could send a representative to the headquarters of the Army, General Miles telegraphed:

Enemy has surrendered.

On the next day, July 15, General Miles advised Admiral Sampson that the surrender had not actually been concluded, and then on the 16th wrote him that at the request of the Spanish officials delay had been granted to communicate with Madrid. This letter inclosed a copy of the agreement of capitulation.

Later in the day General Shafter telegraphed:

Enemy has surrendered. Will you send some one to represent Navy in the matter?

Admiral Sampson's chief of staff arrived at the front at the earliest hour it was possible for him to do so, and informed General Shafter of Admiral Sampson's expectation that, in view of the fact that Santiago had surrendered in face of the joint operations of the Army and Navy, he be one of the signatories to the agreement of capitulation. This General Shafter declined to permit.

The Department, immediately after the battle of Santiago, had an examination of the Spanish wrecks made, and entered into a contract with the Merritt & Chapman Wrecking Company to raise these ships. The *Maria Teresa* was successfully raised and an effort was made by the contractors to bring her to the Norfolk Navy-Yard, as under their contract vessels raised were to be delivered at that port. At the request of the company, a naval officer was on board. On November 1 she encountered heavy weather off the island of San Salvador and was on that night abandoned. She was accompanied by the *Vulcan*, *Leonidas*, and wrecking tug *Merritt*, and it was anticipated that she had sunk in deep water. On November 7 information was received that she was ashore on Cat Island. The *Vulcan* and the tug *Potomac* were at once sent to the scene of the wreck, and after an examination reported that it was not practicable to save her. A court of inquiry into this matter has been ordered.

The contracts for wrecking the other ships have been canceled.

It is probable that a contract will be made with a wrecking company to raise the *Reina Mercedes*, as reports received by the Department indicate that it is possible to save her.

OPERATIONS OF THE BLOCKADE.

The blockade was of an extremely arduous character, generally unrelieved by the exhilaration of combat. Many devoted officers and crews, from the beginning of the war to the end, rendered most valuable and conscientious service without opportunity for winning distinction in battle.

On April 27 Admiral Sampson, having received information that the Spaniards were adding to the defenses of Matanzas, proceeded off that port with his flagship, and, in company with the *Puritan* and *Cincinnati*, shelled the battery. This occasion is notable principally as being the first time our ships were under fire. On April 29 the *Eagle*, while reconnoitering off the entrance to Cienfuegos, was engaged by three of the enemy's vessels in that port; after a short engagement they withdrew, serious injury to one of them, the torpedo gunboat *Galicia*, having been inflicted. The *Marblehead* immediately afterwards shelled the fortifications and gunboats and inflicted damage.

On May 11 boats from the *Marblehead* and *Nashville* cut two cables off Cienfuegos under a heavy infantry fire, during which they were supported by the guns of the *Marblehead* and *Nashville*, and later the *Windom*. In this action one man was killed and eleven men were wounded. On the same date the *Machias*, *Wilmington*, *Winslow*, and the revenue cutter *Hudson* were engaged at Cardenas. The *Winslow*, when well within the harbor, suddenly found herself under the fire of masked shore batteries. Many of the enemy's shells struck her, disabling her port main engine, forward boiler, and steering engine, and setting one compartment on fire. Ensign Worth Bagley, her executive officer, and four of her crew were killed. Her commanding officer was wounded, and the vessel, with the rest of the crew, was only saved from entire

destruction by the gallant action of the commanding officer of the *Hudson*, who took his vessel in under a severe fire and towed the *Winslow* out. In connection with the same expedition, a force was landed on Diana Cay, in Cardenas Bay, to explode the harbor mines, which were understood to be controlled from a station on that cay. The station having been hurriedly abandoned, the American flag was hoisted over it. This, so far as the records of the Navy Department show, was the first raising of the American flag in Cuba during the war.

On the 13th of June the *Yankee* had an engagement with a gunboat and batteries off Cienfuegos. On June 15 the *Texas*, *Marblehead*, and *Suwanee* proceeded into Guantanamo Harbor and, after engaging and silencing the adjacent fort and battery, took possession of the harbor. On June 22 the *St. Paul* engaged the torpedo boat *Terror*, supported by the gunboat *Isabel II*, off San Juan, and drove them both into port, the former being so seriously injured that she had to be run on shore when inside. On June 29 the *Eagle* and *Yankton* had an engagement with a force of Spanish cavalry off the mouth of the Rio Hondo. On June 30 the *Hist*, *Wompatuck*, and *Hornet*, while making a reconnoissance between Cape Cruz and Manzanillo, were engaged with the enemy's vessels, field batteries, and infantry at Manzanillo. The *Hornet* was struck many times, and had her main steam pipe cut, being thereby absolutely disabled. The *Wompatuck* gallantly towed the *Hornet* out of danger. Another action occurred at Manzanillo on July 1, in which the same Spanish gunboats were engaged on one side and the *Scorpion* and *Osceola* on the other.

On the morning of July 5 the *Alphonso XII* was run ashore and destroyed off Port Mariel, to the westward of Havana, while attempting to escape from the *Hawk*.

On July 12 the *Eagle* chased, forced ashore, captured, and destroyed the Spanish armed steamer *Santo Domingo* to the westward of the Isle of Pines. On July 15 the *Annapolis* was engaged with the batteries near Barracoa. On July 18 the *Wilmington*, *Helena*, *Scorpion*, *Hist*, *Hornet*, *Wompatuck*, and *Osceola* engaged the gunboats and shore batteries at Manzanillo, and succeeded in destroying gunboats in that harbor. On the same date the *Annapolis*, *Wasp*, *Leyden*, and *Topeka* took possession of the Bay of Nipe, during which the Spanish cruiser *Jorge Juan* was attacked and sunk.

On the 12th of August the *Newark*, accompanied by the *Resolute*, carrying the First Battalion of Marines, and the *Suwanee*, *Hist*, *Osceola*, and *Alvarado*, proceeded to Manzanillo, where a demand for the surrender of the place was made. This refused, the place was bombarded. At daylight on the morning of the 13th a large number of white flags were seen floating from the block houses and batteries, and a boat came out from the shore carrying a flag of truce. The captain of the boat delivered to the senior officer present the cipher dispatch of the Department stating that the President had signed the protocol of peace and had proclaimed an armistice.

OPERATIONS OFF PORTO RICO.

The transports of the army corps which was charged with the campaign against Porto Rico were convoyed from Santiago to the southern coast of this island by the *Massachusetts* (flagship), *Columbia*, *Yale*, *Dixie*, and *Gloucester*. The *Columbia* and *Yale* also carried some of the troops. This convoy was under the command of Capt. F. J. Higginson. At Guanica he was joined by the *Annapolis* and *Wasp* and at Ponce by the *Cincinnati*. The army commander had urgently requested a large naval force. The *Puritan* and *Amphitrite* went to San Juan, which was also blockaded by the *New Orleans*.

On July 28 the city of Ponce surrendered to a small squadron consisting of the *Dixie*, *Annapolis*, *Gloucester*, and *Wasp*, a landing party from which took possession at 6 a. m. and hoisted the flag. On August 1 the *Gloucester* and the *Wasp* took possession of Arroyo. On August 6 the *Amphitrite* landed a party at Cape San Juan and took possession of the light-house at that place. This party held the place during the night of August 8 against an attack by a much superior Spanish force.

MARINE CORPS.

The excellent work done by the Marine Corps during the war with Spain is set forth in the report of the Colonel-Commandant. An allotment of \$106,529 was made to this corps from the money appropriated for national defense, and energetic measures were immediately taken to put it in complete readiness for war. The first marine battalion, composed of six companies, one of which was an artillery company, was organized at New York, under Lieutenant-Colonel Huntington, and equipped for service in Cuba. The command numbered 24 commissioned officers and 623 enlisted men, and under instructions from the Department sailed for Key West on April 22 on board the transport *Panther*. On June 7 the *Panther* left Key West for Guantanamo Bay, Cuba, where she arrived on the 10th, and the battalion landed and went into camp. This was the first permanent landing by our forces on Cuban soil. On the following day the camp was attacked by a force of Spaniards and from that time until the 14th was constantly under fire. Asst. Surg. John Blair Gibbs and five enlisted men were killed.

Too much praise can not be given these officers and men for the gallantry and discipline displayed under the trying conditions which confronted them almost immediately upon landing on Cuban soil. For three days and nights they were compelled to remain constantly under arms, repelling the Spanish attacks, and this, too, in a semitropical country, where the dense undergrowth afforded shelter to the sharpshooters of the enemy.

This command remained in camp at Guantanamo from the 10th of June to the 5th of August and did not lose a man by disease, while the cases of sickness was only 2 per cent. This speaks for the careful prep-

aration of the battalion for the service which devolved upon it, and for the vigilance and care of those intrusted with the health and comfort of the men.

But praise is not alone due to those officers and men of the Marine Corps who served with the First Marine Battalion. The records are full of incidents in which conspicuous and gallant service was rendered.

In view of the prospective increase of the Navy and the necessity of guarding the naval stations which will be needed in the newly acquired territory of the United States, and especially in view of the general efficiency displayed by this Corps, it should be increased to at least 5,000 men and necessary officers, and attention is called to the report on this subject of its Colonel Commandant.

NAVAL MILITIA.

Prior to the outbreak of hostilities it was found necessary in the preparations for coast defense and for the purpose of providing crews for auxiliary ships to make a large increase in the enlisted force of the Navy.

The only additional trained men available were the officers and men of the naval militias of the several States, which, under appropriations from Congress, had been armed and equipped and given a certain amount of training in the line of preparation for the defense of the shores and harbors of their several States. In the absence of authority for calling these men into service, the governors of these States patriotically granted them leaves of absence or permitted them to resign from the State organizations in order to enlist in the Navy. During the war about 4,000 officers and men were added to the enlisted force of the Navy in this manner, and were assigned to duty in the Auxiliary Naval Force, the Coast Signal Service, and especially on board of cruising ships, some of which, for instance the *Yankee*, *Dixie*, *Prairie*, and *Yosemite*, were entirely officered and manned by them with the exception of the commanding, executive, and navigating officers.

These organizations were largely recruited outside of the seafaring class, and lacked the experience in gunnery, navigation, and the habits of the sea which are essential to immediate efficient service in the Navy. On the other hand, they were men of a high standard of education and intelligence, and rapidly acquired while on shipboard the knowledge necessary for their efficiency. Considering their lack of experience, the services rendered by them were so valuable that the country has been amply repaid for the money expended in their instruction and training.

THE UNITED STATES AUXILIARY NAVAL FORCE.

This force was organized for service in the war with Spain under the terms of a joint resolution of Congress approved May 26, and its provisions were immediately applied in the preparations for coast defense which had been progressing since March 23.

The personnel of the force was almost entirely contributed by the Naval Militia organizations of the various States. A small percentage was supplied by the merchant marine. Ten of the old monitors which had been laid up for many years were put in commission and officered and manned by the Naval Militia. Many of these vessels cruised from port to port and went to sea for target practice, which gave the officers and men valuable training. In addition, this service afforded a sense of protection to the people along our entire coast line.

Ten yachts and five tugs were purchased out of the appropriation of \$3,000,000 carried by the joint resolution, their cost aggregating \$593,500. At the time of its maximum strength the fleet of the Auxiliary Naval Force included 41 vessels in commission. These were distributed at various important ports and strategic points on the coast, which, for the purposes of administration, was divided into 9 districts, 6 on the Atlantic, 2 on the Gulf, and 1 on the Pacific coast.

The duty of protecting mine fields and of maintaining quarantine regulations was performed by a fleet of 8 converted yachts, 10 converted tugs, and 1 side-wheel steamer, all officered and manned by men from the Naval Militia, and by 4 revenue cutters, with their regular officers and crews, which were stationed on the Pacific coast.

The officers and men of the force displayed special aptitude for the work connected with patrol duty, owing to their intimate knowledge of home waters and their acquaintance with the harbors, bases of supply, and local prevailing weather conditions.

COAST SIGNAL SERVICE.

The coast line was divided into eight districts, in which were distributed 36 signal stations, officered and manned entirely by the State Naval Militia. Under instructions from the Secretary of the Treasury, the Life-Saving Service and the Light-House Service cooperated, and the observers of the Weather Bureau were also-called upon. The different stations of the Signal Service were connected with the general telegraph and telephone systems of the country, and with the Life-Saving Service telephone lines, that link together every station along the coast.

When all these arrangements were complete there were 2,326 men on the lookout for the approach of an enemy's vessel or of suspicious craft of any kind. Practically our entire coast line from Maine to Texas was under observation. While this service was not called upon to report the movements of any of the Spanish ships, it gave a feeling of security to the people along our entire coast line; and the experience gained by the instruction of this large number of men in the use of the international code flags and books, and of the "wigwag" code and naval night signals, will greatly add to the efficiency of such a service should it be necessary to again organize it.

PURCHASE OF AUXILIARY VESSELS.

Upon the passage of the bill appropriating \$50,000,000 for national defense, the Department at once took steps for the purchase of auxiliary vessels. On March 12 a board was appointed and directed to communicate with the owners of vessels and obtain from them the terms on which they were willing to sell or charter, and to examine thoroughly such vessels as the Department might designate or the board consider desirable for the use of the Navy, giving particular attention to the condition of the boilers and engines, coal capacity, etc.

The following is the list of vessels purchased. In addition to these, the *City of Peking* was chartered from the Pacific Mail Steamship Company at \$1,000 a day for the transportation of supplies from San Francisco to Manila. Also four steamers of the International Navigation Company were chartered—the *St. Paul*, *St. Louis*, *New York* (renamed the *Harvard*), and the *Paris* (renamed the *Yale*)—at \$2,500 a day each for the first two and \$2,000 a day each for the last two. These four steamers were, at the request of the War Department, turned over to it to meet its necessities in the way of transporting troops—the *Yale* for sixty-five days, the *Harvard* for twelve days, the *St. Louis* for twenty-eight days, and the *St. Paul* for forty-eight days. The city of Philadelphia loaned to the Navy Department, for the nominal sum of \$1, its ice boat No. 3 (renamed the *Arctic*). The yachts *Free Lance* and *Buccaneer* were also generously loaned for service during the war, without charge, the former by Mr. F. Augustus Schermerhorn and the latter by Mr. William R. Hearst.

Name before purchase.	Renamed.	Date of purchase.	Purchase price.	Previous owners.
<i>Columbia</i>	<i>Wasp</i>	Mar. 26, 1898	\$95,000	J. H. Ladew.
<i>Alicia</i>	<i>Hornet</i>	Apr. 6, 1898	117,500	Henry M. Flagler.
<i>Almy</i>	<i>Eagle</i>	Apr. 2, 1898	110,000	Frederick Gallitin.
<i>Hermione</i>	<i>Hawk</i> .....	.....do	50,000	Henry L. Pierce estate.
<i>D. C. Ivans</i>	<i>Nexinacot</i>	Mar. 25, 1898	30,000	Moran & Co.
<i>P. H. Wise</i>	<i>Sioux</i>	Mar. 26, 1898	25,553	Do.
<i>Winthrop</i>	<i>Osceola</i>	Mar. 31, 1898	100,000	Staples Coal Co.
<i>El Toro</i>	<i>Accomac</i>	Mar. 26, 1898	40,000	Southern Pacific Line.
<i>Wilnot</i>	<i>Potomac</i>	Apr. 14, 1898	125,300	Ocean Towing and Wrecking Co.
<i>Edward Luckenback</i> ..	<i>Tecumseh</i>	Apr. 2, 1898	45,000	Luckenback & Co.
<i>Walter A. Luckenback</i> ..	<i>Uncas</i> .....	.....do	75,000	Do.
<i>Atlas</i>	<i>Wampatuck</i>	Apr. 4, 1898	65,000	Standard Oil Co.
<i>Josephine</i>	<i>Vixen</i>	Apr. 9, 1898	150,000	T. A. B. Widener.
<i>Mayflower</i>	<i>Mayflower</i>	Mar. 19, 1898	430,000	Ogden Goellet estate.
<i>Sovereign</i>	<i>Scorpion</i>	Apr. 7, 1898	300,000	M. C. D. Borden.
<i>Creole</i>	<i>Solace</i> .....	.....do	600,000	Cromwell S. S. Line.
<i>Diogenes</i>	<i>Topeka</i>	Apr. 2, 1898	170,327	Thames Iron Works (London).
Not named)	<i>Manly</i>	Apr. 13, 1898	24,250	Chas. R. Flint.
Do	<i>Somers</i>	Mar. 26, 1898	72,997	Schichau Iron Works, Elbing, Germany.
<i>Saturn</i>	<i>Saturn</i>	Apr. 2, 1898	290,000	The Boston Towboat Co.

Name before purchase.	Renamed.	Date of purchase.	Purchase price.	Previous owners.
Lebanon.....	Lebanon.....	Apr. 6, 1898	\$225,000	Philadelphia and Reading B. R. Co.
El Norte.....	Yankee.....	do.....	575,000	Southern Pacific Co.
El Rio.....	Dixie.....	Apr. 15, 1898	575,000	Do.
El Sol.....	Prairie.....	Apr. 8, 1898	575,000	Do.
El Sud.....	Yosemite.....	do.....	575,000	Do.
Nietheroy—El Cid.....	Buffalo.....	July 11, 1898	575,000	Brazilian Government.
Amazonas.....	New Orleans.....	Mar. 16, 1898	1,429,315	Do.
Almirante Abreu.....	Albany.....	do.....	1,205,000	Do.
Merrimac.....	Merrimac.....	Apr. 12, 1898	342,000	Hogan Line.
Niagara.....	Niagara.....	Apr. 11, 1898	200,000	Ward Line Steamship Co.
Sterling.....	Sterling.....	Apr. 16, 1898	190,000	Black Diamond Transportation Co.
Enterprise.....	Modoc.....	Apr. 29, 1898	30,000	American Towing Co.
No. 18.....	No. 18.....	Apr. 18, 1898	2,800	Philadelphia Transportation and Lightering Co.
Nashua.....	Nashua.....	Apr. 8, 1898	155,729	Frank Smythe.
Zafiro.....	Zafiro.....	Apr. 9, 1898	87,597	China and Manila Steamship Co.
Alice.....	Alice.....	Mar. 26, 1898	19,000	John M. Worth.
C. G. Coyle.....	Choctaw.....	Apr. 19, 1898	32,500	W. G. Coyle.
Panwood.....	Powhatan.....	Apr. 8, 1898	42,500	Walsh & Doran.
Fearless.....	Iroquois.....	Apr. 18, 1898	150,000	J. D. Spreckels Bros. Co.
Vigilant.....	Vigilant.....	Apr. 19, 1898	60,000	Do.
Active.....	Active.....	Apr. 18, 1898	75,000	Do.
Hercules.....	Hercules.....	Apr. 26, 1898	40,000	Standard Oil Co.
Southery.....	Southery.....	Apr. 16, 1898	100,000	Edward Luckenbach.
Venezuela.....	Panther.....	Apr. 19, 1898	375,000	Red D Line Steamship Co.
Yumuri.....	Badger.....	do.....	367,000	Ward Line Steamship Co.
Yorktown.....	Resolute.....	Apr. 21, 1898	475,000	Old Dominion Steamship Co.
T. P. Fowler.....	Mohawk.....	Apr. 22, 1898	44,000	Cornell Steamboat Co.
Theopha.....	Hiet.....	Apr. 22, 1898	65,000	David Dowd, Jr.
Restless.....	Restless.....	Apr. 22, 1898	29,000	Hiram W. Sidley.
Illawarra.....	Onida.....	May 21, 1898	60,000	Eugene Tompkins.
Viking.....	Viking.....	Apr. 22, 1898	30,000	Horace A. Hutchins.
Chatham.....	Vulcan.....	May 2, 1898	350,000	Merchants and Miners' Line.
Penelope.....	Yankton.....	May 20, 1898	125,000	H. E. Converse.
Right Arm.....	Pontiac.....	Apr. 23, 1898	30,000	Merritt & Chapman.
Philadelphia.....	Peoria.....	May 23, 1898	100,000	Philadelphia Pilot Association.
Corsair.....	Gloucester.....	Apr. 23, 1898	225,000	Pierpont Morgan.
Menemaha.....	Iris.....	May 25, 1898	145,000	Miami Steamship Co.
John Dwight.....	Pawnee.....	May 6, 1898	25,000	Geo T. Moon.
Justin.....	Justin.....	Apr. 23, 1898	145,000	Bowring & Archibald.
Horitense.....	Takoma.....	Apr. 30, 1898	28,000	O'Connor & Smoot.
Alleen.....	Alleen.....	May 2, 1898	65,000	Richard Stevens.
Scindia.....	Scindia.....	May 12, 1898	267,657	Henderson Bros.
Comanche.....	Frolic.....	May 23, 1898	115,000	H. M. Hanna.
Ilwaco.....	Supply.....	Apr. 30, 1898	325,000	International Navigation Co.
Kingston.....	Cesar.....	Apr. 21, 1898	175,194	John Holman & Sons.
Dorothea.....	Dorothea.....	May 21, 1898	187,500	Thos. McKean estate.
Gov. Russell.....	Gov. Russell.....	May 11, 1898	71,000	City of Boston.
East Boston.....	East Boston.....	June 2, 1898	57,500	Do.
W. H. Brown.....	Piscataqua.....	May 11, 1898	130,000	W. H. Brown.
J. D. Jones.....	Apache.....	May 24, 1898	54,510	Merritt & Chapman Wrecking Co.

Name before purchase.	Renamed.	Date of purchase.	Purchase price.	Previous owners.
Celtic King.....	Celtic.....	May 14, 1898	\$342, 800	Federal Line (London).
Rhodia.....	Cassius.....	May 24, 1898	102, 304	William Lamb.
A. W. Booth.....	Massachusetts.....	Apr. 25, 1898	32, 800	Moran Towing Co.
Joseph Holland.....	Hannibal.....	Apr. 14, 1898	147, 941	Francis Stanley Holland (London).
Atala.....	Alexander.....	Apr. 25, 1898	202, 526	New Star Blue Line Steamers (London).
Ehs. Holland.....	Leonidas.....	Apr. 14, 1898	147, 941	Francis Stanley Holland (London).
Harlech.....	Pompey.....	Apr. 12, 1898	111, 829	Jas. & Chas. Harrison (Lon- don).
Abaranda.....	Abaranda.....	May 5, 1898	175, 800	J. Graham.
(Not known).....	Scipio.....	.....do.....	85, 700	Geo. P. Walford.
Peter Johnson.....	Brutus.....	June 2, 1898	215, 800	L. F. Chapman & Co.
No. 55.....	Water Barge No. 1..	May 25, 1898	24, 000	Standard Oil Co.
Whitgift.....	Nere.....	June 20, 1898	215, 000	McCondray & Co.
Nere King.....	Rainbow.....	June 22, 1898	178, 576	Thomas Ronaldson.
Enquirer.....	Enquirer.....	.....do.....	82, 000	W. J. Conner.
Iaca.....	Iaca.....	June 12, 1898	85, 800	Frank B. McQuesten.
Huntress.....	Huntress.....	June 7, 1898	27, 500	F. C. Fowler.
Stranger.....	Stranger.....	June 9, 1898	75, 000	Mrs. Mary Lewis.
Kate Jones.....	Seminole.....	June 6, 1898	25, 800	Boston Towboat Company
Bristol.....	Cheyenne.....	July 2, 1898	22, 800	J. J. Cummings.
Eugenia.....	Siren.....	June 9, 1898	42, 800	J. G. Cassatt.
Elfrida.....	Elfrida.....	June 15, 1898	82, 000	Dr. Seward Webb.
No. 235.....	Sylph.....	June , 1898	52, 800	John Roach & Co.
Shearwater.....	Shearwater.....	May 9, 1898	22, 000	Henry R. Wolcott
Sylvia.....	Sylvia.....	June 12, 1898	25, 000	Edward M. Brown.
Hercules.....	Chickasaw.....	June 25, 1898	15, 000	M. Revel.
Confiance.....	Waban.....	.....do.....	22, 800	Do
Kanawha.....	Kanawha.....	June 7, 1898	52, 000	John P. Duncan.
Pedro.....	Hector.....	June , 1898	202, 000	(Prize).
Port Chalmers.....	Glacier.....	July , 1898	242, 550	Federal Line (London).
Titania.....	Marcellus.....	June 12, 1898	90, 800	William Lamb.
Refrigerating ship.....	.....	.....	247, 704	.....
Lucilene.....	Arethusa.....	Aug. 12, 1898	212, 802	Thos. S. Hopkins.

THE FIGHTING FORCE.

The number of enlisted men allowed by law prior to the outbreak of hostilities was 12,500. On August 15, when the enlisted force reached its maximum, there were 24,123 men in the service. This great increase was made necessary by the addition of 128 ships to the Navy. The maximum fighting force of the Navy, separated into classes, was as follows:

Battle ships (first class).....	4
Battle ships (second class).....	1
Armored cruisers.....	2
Coast-defense monitors.....	6
Armored ram.....	1
Protected cruisers.....	12
Unprotected cruisers.....	3
Gunboats.....	18

Dynamite cruiser	1
Torpedo boats	11
Vessels of old Navy, including monitors	14
Auxiliary navy:	
Auxiliary cruisers	11
Converted yachts	28
Revenue cutters	15
Light-house tenders	4
Converted tugs	27
Converted colliers	19
Miscellaneous	19

IN GENERAL.

Fleet and squadron commanders and the captains of individual vessels serving far away from their bases of supply and information were kept in touch with the Department by means of cable communication and dispatch-boat service, and were furnished promptly with information collected from the many sources at the disposal of the Department. Arrangements were made to supply the fleet in Cuban waters and the squadron in the Philippines with coal and fresh provisions, and the North Atlantic fleet had at its disposal a thoroughly equipped hospital ship, distilling ships, and a repair vessel capable of making any but the largest repairs.

The Department feels, in contemplating the vast amount of work necessary to the successful operations of the Navy during the past year, that the country as well as the service has cause for congratulation in the results which have followed and which have been so generally approved, and in the further fact that no personal feeling has arisen to mar the glorious victories and magnificent work of the service.

REPORTS.

REPORT OF THE ASSISTANT SECRETARY.

The Assistant Secretary of the Navy is charged with some of the most important branches of the work of the Department, and attention is invited to the valuable report which he has made and which has been published with other reports.

BUREAU OF YARDS AND DOCKS.

The expenditures of the Bureau of Yards and Docks at the navy-yards and stations during the fiscal year 1898 amounted to \$1,772,155.10

At the New York Navy-Yard the improvements included a causeway across the Wallabout channel, several sections of quay wall in the yard, dredging the channel, and alterations and modifications in buildings.

At the League Island Navy-Yard expenditures were made upon the fresh-water basin, which is of great value for the laying up of ships in ordinary, and for dredging operations upon the Delaware River front of the yard.

Improvements have been made upon the buildings at the Washington Navy-Yard.

At the Norfolk yard improvements have included an important and permanent extension of the quay wall on the water front, dredging the channel in front of the yard, and extensive repairs to the dry dock.

Extensive improvements have been begun at the naval station at Key West, and at Fort Jefferson, Dry Tortugas, Florida, preparatory to the construction of large coaling stations for the use of fleets in Southern waters. Facilities at these points such as are now under construction would have been of vast advantage to the service at the outbreak of the war with Spain.

At Mare Island, the principal navy-yard on the Pacific coast, extensive improvements have been made, comprising the dredging of a channel of ample depth in front of the yard, and thence through Mare Island Strait to the bay. Many improvements of miscellaneous character, enhancing the value of the station, were carried on during the year. A disastrous earthquake visited this station in March last, doing great damage to the buildings. Proper authority having been immediately given by Congress, the work of restoration has proceeded as rapidly as possible.

ESTIMATES.

Estimates are submitted for the yards and stations based upon the expenditures of preceding years, and such increases are asked as the events of the last year have shown are necessary if the yards and stations are to be maintained in a condition of readiness for the demands of war.

The last Congress made appropriations for extensions to the electric-light plants at the navy-yards, which were found inadequate when it became necessary to work at night as well as during the day in fitting out vessels for war service. Some of these improvements have been completed and others are well in hand. Certain further extensions are asked for in the present estimates in the interest of increased efficiency.

The service was found to be deficient in facilities for the storage and handling of coal at convenient points and intervals, and the Department constituted a naval coal board, with instructions to make examination, report, and recommendation in the premises. This board has made an exhaustive and a valuable report, which will be found in the appendixes hereto. The attention of Congress is invited to a consideration of its recommendations; also to the indorsement thereon of the Bureau of Yards and Docks.

BUREAU OF EQUIPMENT.

The report of the Chief of the Bureau of Equipment includes the reports of the Superintendent of the Naval Observatory, the director of the Nautical Almanac, the hydrographer to the Bureau of Equipment, the inspector of electrical appliances, and the superintendent of compasses, showing in detail the work done under each of these branches during the past year. It also gives the work done in the equipment of vessels and in the manufacture of equipment articles.

The obligations of the Bureau under the head of "Equipment of vessels" during the fiscal year amounted to \$2,975,000, and under "National defense" for the same period to \$1,021,033. The largest single item of expenditure was for the purchase of coal. Four hundred and fifty-two thousand five hundred and fifty-one tons of coal were purchased, at a cost of \$2,122,000, while but 138,318 tons were purchased during the fiscal year ending June 30, 1897, at a cost of \$655,921.

COLLIERS AND THE SUPPLY OF COAL FOR SHIPS.

When war became imminent the Bureau of Equipment was impressed with the necessity of providing an adequate supply of coal for vessels of the Navy and began immediately to meet it. In view of the lack of coaling stations, it was important to procure a number of steam colliers for supplying the fleets on the blockade and elsewhere. The Navy was

unprovided with them; effective fleet movements at sea were impracticable without them; and it was necessary to procure them at the earliest possible time.

The vessels purchased as colliers were all of the merchant-ship type, and, in order to render their character more difficult to ascertain, their general appearance was not changed. They were fitted with towing appliances, as most of them were powerful vessels, capable of towing disabled ships of war should it become necessary.

The vessels purchased and employed on the Atlantic coast and their coal-carrying capacities were as follows:

	Tons.
Merrimac	4,976
Abarenda	3,843
Alexander	4,200
Cæsar	3,200
Hannibal	2,435
Justin	2,200
Lebanon	1,800
Leonidas	2,450
Pompey	1,700
Cassius	2,800
Saturn	2,400
Scindia	4,550
Marcellus	2,400
Southey	3,000
Sterling	2,600

The *Nero*, of 4,200 tons, and the *Brutus*, of 4,800 tons capacity, were purchased for use on the Pacific coast and in convoying ships to Manila.

These vessels were purchased outright, manned by a naval force, and provided with batteries for repelling attacks from privateers.

The work of the Bureau of Equipment in providing coal for the fleet was performed in the most satisfactory manner, and, notwithstanding the many difficulties which developed, there was at no time any complaint of lack of coal.

HYDROGRAPHIC OFFICE.

The Hydrographic Office, under an act of Congress approved May 4, 1898, has been transferred from the Bureau of Navigation to the Bureau of Equipment. Large demands were made upon this office during the period of the war in supplying charts to the ships added to the Navy.

THE NAVAL OBSERVATORY.

At the commencement of hostilities with Spain, the Observatory had on hand for issue a stock of nautical instruments, including chronometers, adequate to the wants of the service on a peace basis. To equip the large number of vessels added for war purposes, the resources of all dealers in such instruments in this country were exhausted, and

some importations from abroad were necessary. In no case was there any delay in equipping vessels with the navigating outfit supplied by the Observatory.

During the past year observations of the sun, moon, and planets were made on all nights favorable for observing, the number of routine observations of this character being greater than for any previous year in the history of the Observatory. Comets have been observed when practicable. Such progress as has been possible with the present computing force has been made in reducing observations and preparing them for publication.

The Transit Circle Star Catalogue, containing the places of 5,151 stars observed with the 8.5-inch transit circle, has been completed and is now being published.

The department of Nautical Almanac has fulfilled its functions by the distribution of the publications of that office. The American Ephemeris for 1900 has been published and that for 1901 is being printed.

BUREAU OF NAVIGATION.

The report of the Chief of the Bureau of Navigation includes the reports of the Superintendent of the Naval Academy, the commanding officer of the Naval Training Station, the Chief of the Office of Naval Intelligence, the commanding officer of the Naval Home, and the Superintendent of the Coast Signal Service.

The work devolving upon the Bureau of Navigation during the period of war has been of a very arduous and voluminous character. The routine work is always large, but in time of war the demands upon this Bureau are enormously increased. This can be readily understood when it is realized that all communications from and to vessels in commission and all orders to officers of the Navy are made through the Chief of the Bureau of Navigation, who occupies to the naval service the same relative position as the Adjutant-General of the Army does to the military establishment.

It was necessary during the war to have an officer on duty in the Bureau every night, and, in fact, to provide that at all times it should be open to receive dispatches and to send orders and information. It was necessary to keep in touch with all vessels in the service and keep them under orders; to inform commanding officers of the movements of the enemy's ships, and to provide the necessary officers and men to man the vessels added to the Navy as rapidly as they became ready for duty.

RETIRED OFFICERS.

Upon the declaration of war the following number of retired officers were assigned to such active duty as their age or physical condition would permit, and rendered valuable service:

	Employed at some time during the war.	Still on active duty.
Rear admirals.....	14	8
Commodores.....	3	1
Captains.....	6	3
Commanders.....	14	3
Lieutenant-commanders.....	13	8
Lieutenants.....	35	16
Lieutenants (junior grade).....	6	3
Ensigns.....	11	5
Medical.....	20	7
Pay.....	8	1
Engineer.....	64	23
Chaplains.....	2	2
Naval constructors.....	3	2
Civil engineers.....	2	1
Boatswains.....	6	2
Gunners.....	7	2
Carpenters.....	6	1
Sailmakers.....	3	1
Mates.....	2	0
Total.....	225	99

VOLUNTEER OFFICERS.

Immediately upon the outbreak of hostilities between the United States and Spain an increase in the number of officers was required. Boards were appointed to conduct the examination of applicants, and those who passed successfully were placed on an eligible list, from which appointments were made as the demands of the service required.

Up to September 24, 1898, since which date no appointments have been made, 856 appointments of officers for temporary service were issued, as follows:

Commanders.....	3	
Lieutenant-commanders.....	3	
Lieutenants.....	112	
Lieutenants (junior grade).....	114	
Ensigns.....	209	
Naval cadets (line).....	15	
Total line officers.....		456
Medical officers.....		64
Pay officers.....		64
Engineer officers.....	185	
Warrant machinists.....	20	
Total engineer force.....		205

Chaplains	2	
Boatswain	1	
Carpenters.....	3	
Mates	18	
		<hr/> 24
Total naval officers		813
Second lieutenants, United States Marine Corps.....		43
		<hr/> 856
Total.....		856

Two hundred and one candidates who passed the required examinations were not appointed by reason of their services not being required.

For the line.....	31
Medical Corps	7
Pay Corps	71
Engineer Corps.....	92
	<hr/>
Total	201

One hundred and eighty-one candidates failed to pass the required examinations.

Up to and including November 15, 1898, 513 appointments have been vacated, as follows:

Declined.....	20
By termination of service.....	7
By resignation.....	26
By promotion	11
By expiration of commission	1
By death	3
By honorable discharge	445
	<hr/>
Total	513

Immediately after the signing of the peace protocol, the Department began to put out of commission such vessels as were not needed, and to discharge the volunteer officers as rapidly as the exigencies of the service would permit.

Notwithstanding the limitations of their naval education and experience, the zeal and attention to duty of these volunteer officers were of a high order. Many of them left large interests at home, and made material sacrifices to serve their country; and the Department desires to place on record its appreciation of their services.

NAVAL ACADEMY.

The act making appropriations for the naval service for the current fiscal year provided for certain new buildings and improvements at the Naval Academy, and appropriated the sum of \$500,000 for this purpose. Of these public works, four double houses for officers' quarters are now building under contract with Mr. C. R. Bartlett. The architect,

Mr. Ernest Flagg, is at work on the plans and specifications for the other buildings.

A board has been appointed to report a course of instruction in naval construction at the Naval Academy. This is necessary in view of the large increase of new naval vessels.

BUREAU OF ORDNANCE.

The current work of the Bureau of Ordnance has been greatly increased by the war, in the fitting out of auxiliary vessels and in the preparation and distribution of ammunition and ordnance supplies of all kinds.

As soon as it became apparent that war with Spain was unavoidable, orders were placed for large quantities of powder, projectiles, fixed ammunition, small arms, and small guns for secondary batteries. The contractors showed every disposition to meet the requirements of the Government, that work should be carried on without intermission and to increase their capacity whenever necessary. It should be said in regard to the contractors for war materials that no disposition was shown in any instance to take advantage of the unusual needs of the Government.

All vessels of the Navy, at home and abroad, were filled with ammunition, and vessels laden with a reserve supply were kept in readiness to restock the fleets.

Gun-cotton mines and mining outfits were prepared and issued in large numbers, and torpedo outfits for 75 auxiliary torpedo boats were prepared.

The Government shops were required to work continuously, and an adequate supply of war material of all kinds was procured. It is a striking fact that the resources of the country to supply war material seemed practically limitless, and were lightly taxed in the recent emergency. This avoids the necessity for purchases abroad, and it is gratifying that it was necessary to purchase so little war material there.

One hundred and twenty-one auxiliary vessels and fourteen regular vessels received batteries and complete ordnance outfits at the various navy-yards.

GUNS.

During the past year 112 guns of various calibers from 4 to 13 inch have been completed at the Naval Gun Factory, viz: Sixteen 4-inch, fifty-four 5-inch, twenty-nine 6-inch, one 12-inch, and twelve 13-inch. Thirty-three 6-inch and two 8-inch guns of ordinary type have been converted into rapid-firing guns.

Twenty 4-inch guns and mounts under contract with private firms have also been completed, and seventeen others partly completed.

Forgings have been ordered for five 8-inch, twenty 5-inch, twenty-six 4-inch, and one 3-inch (14 pounder) guns, and contracts will soon be made for gun forgings for vessels authorized by the last Congress.

Seven hundred and ninety guns for the main batteries of vessels of the Navy have been ordered, and 620 have been completed. Of this number 544 have been assigned to vessels of the new Navy; 18 to old vessels; 19 to training ships; while 160 are available for auxiliary vessels, and 43 are in reserve.

New designs have been prepared for guns of all calibers calculated to insure a much greater muzzle energy than is obtained from guns of the same caliber now in service. The first of these new guns will be installed on board the battle ships *Maine*, *Ohio*, and *Missouri*, and on board of the four harbor-defense monitors authorized at the last session of Congress.

The work on gun construction is well in advance of all vessels authorized.

Reports have been received from the various vessels as to the performance of their ordnance outfit and equipment during the war, and the performance of the guns, mounts, turrets, and ammunition was in general thoroughly satisfactory.

SMOKELESS POWDER.

Smokeless powder is a necessity, not only on account of the absence of smoke, but because of the greater velocities obtained by its use and the freedom from residue which facilitates rapid firing. While a satisfactory smokeless powder has been adopted and is manufactured in considerable quantities, it was, owing to lack of time and lack of facility for manufacturing on a large scale, impossible to introduce it generally into the Navy during the recent war. Nevertheless several vessels were given a complete outfit, and large quantities were distributed. Steps have been taken to give all vessels hereafter fitted out a complete supply, and it is proposed to accumulate a large amount. Congress at its last session appropriated a sum of money for the erection of a Government factory for the manufacture of smokeless powder, and plans therefor have been prepared, land has been cleared at Indian Head, Md., and the work of construction is now in progress.

TORPEDOES AND TORPEDO OUTFITS.

The Department is fairly well supplied with torpedoes and has adopted a type of tube for underwater discharge, to be used in future vessels.

The outfits of all destroyers and torpedo boats authorized will be ready in advance of the vessels.

ARMOR.

All the armor except the shutter plates for the battle ships *Kearsarge* and *Kentucky* has been completed, accepted, and delivered to the ship-builders.

Owing to circumstances beyond its control the Department was not enabled to enter into contracts for the armor of the battle ships *Alabama*, *Illinois*, and *Wisconsin* until June last, one year and nine months after the vessels themselves had been contracted for. The contracts require that deliveries begin in December, and such good progress has been made that there is no doubt this requirement of the contracts will be met.

No contracts have as yet been made for the armor for the battle ships *Maine*, *Ohio*, and *Missouri*, nor for the four coast-defense monitors authorized by the last Congress.

Improvements have been made in the method of face-hardening armor, and have been applied to certain experimental plates tested by the Department.

MAGAZINES AND STATIONS.

The exigencies of the late war have demonstrated the necessity for first-class magazine facilities of liberal size and with room for expansion.

At New York, where the greater portion of work was performed and where large quantities of ammunition must of necessity be stored, the accommodations are of a temporary character, and it is an urgent necessity that a permanent modern magazine be erected. A board of officers is considering the question of a suitable site, in accordance with a provision in the last naval appropriation bill.

At Philadelphia and Norfolk improvements are either making or are about to be made to the magazines. The shell houses at the former place, however, are inadequate in size and need to be extended. With these improvements completed the magazines at these points will be on a satisfactory footing for a number of years.

At Boston the magazines and shell houses are receiving a much-needed overhauling.

The Department has taken certain preliminary steps with a view to the adoption of a uniform caliber for small arms and machine-guns and a uniform standard small-arm cartridge for the Army, Navy, and Marine Corps. It is, in the opinion of the Department, very desirable that the different branches of the military service should be armed with the same weapon and supplied with the same ammunition.

ELECTRICITY.

The use of electrical power has been authorized to a greater extent on the *Kearsarge* and *Kentucky* than on any other vessels. All auxiliaries outside of the engine and fire rooms, except the anchor engine and steering engine, are to be operated by electricity. Turret turning gear, ammunition hoists, rammers and elevating gear for the turret guns, and boat cranes and deck winches are operated by electric motors.

In the vessels of the *Alabama* class the use of electric power is to be the same, except that boat cranes and deck winches are to be operated by steam.

In the three battle ships and the four coast-defense monitors just contracted for, electric power is to be employed to the same extent that it is in the *Alabama* class, and it is possible that even a more extended use may be made of it.

The ease of manipulation, perfection of control, absence of heat, and facility of running cables as compared with steam, pneumatic, or hydraulic pipes, make electricity an ideal power on shipboard, and the trend of opinion is in favor of further extending its use.

ARMAMENT OF NEW VESSELS.

Battle ships.—In the armament of the three battle ships recently authorized, the Department has determined to substitute a new type of high-power 12-inch gun for the 13-inch pattern to be installed in the *Illinois* and sister ships. The main batteries of the new ships will consist of four 12-inch rifles in two turrets and of sixteen improved 6-inch quick-firing guns in casemates, in place of four 13-inch and fourteen 6-inch guns, in the *Illinois* class.

The maximum thickness of armor to be employed in the new vessels will be 12 inches for the main belt in place of 16½ inches heretofore used, improvements in the manufacture of armor warranting this reduction.

An important feature of the new design will be the introduction of submerged torpedo tubes, which will be the first installed on any vessels of our Navy, each ship being fitted with two tubes in a separate water-tight compartment, arranged with all necessary appliances for operating them and for the stowage of eight 5-meter torpedoes. The Department has proceeded with considerable caution in the matter of submerged torpedo discharge, but there is no reason to believe that it will not now be thoroughly successful.

Monitors.—The four new monitors are each to carry two 12-inch high-power guns in a single turret, together with four 4-inch, three 6-pounders, and four 1-pounder guns.

Torpedoes and destroyers.—The new destroyers, 16 in number, will each carry two tubes for 5-meter torpedoes, and have an armament of two 12-pounder and five 6-pounder rapid-firing guns.

The new torpedo boats, 12 in number, will each carry three tubes for 3.55-meter torpedoes, and have an armament of three 3-pounder rapid-firing guns.

BUREAU OF CONSTRUCTION AND REPAIR.

The report of the Chief Constructor refers to the large amount of work done at the principal navy-yards during the war. At the five principal yards, namely, Boston, New York, League Island, Norfolk, and Mare Island, the force under the construction department alone

was increased from 2,200 in January last to a maxim of over 6,000. In addition to the maintenance of regular naval vessels in efficient condition, the greater part of the work of converting auxiliary ships was carried on at these yards. Private shipyards were also utilized extensively for conversion and repair work, and rendered valuable service in expediting the preparation and maintenance of vessels for war purposes.

Since the last annual report of the Secretary of the Navy was submitted, the following vessels have been conditionally or finally accepted, and are now a part of the effective force of the Navy:

Name of vessel.	Type.	Speed required by contract.	Speed obtained on trial.	Date of preliminary acceptance.	Date of final acceptance.	Date of commission.	By whom built.
		<i>Knots.</i>	<i>Knots.</i>				
Princeton....	Composite gunboat.	12	10.637	July 25, 1898	.....	May 27, 1898	Dialogue & Son.
Rodgers	Torpedo boat.	24.5	24.6	Apr. 19, 1898	Sept. 26, 1898	Apr. 2, 1898	Columbian Iron Works.
Winslow .....	.....do	24.5	24.82	Dec. 30, 1897	May 13, 1898	Dec. 29, 1897	Do.
Du Pont.....	.....do	27.5	28.51	Sept. 17, 1897	Mar. 14, 1898	Sept. 23, 1897	Herreshoff Mfg. Co.
Morris.....	.....do	22.5	24.05	May 12, 1898	.....	May 11, 1898	Do.
Talbot.....	.....do	20	21.15	Mar. 26, 1898	Sept. 28, 1898	Apr. 4, 1898	Do.
Gwin .....	.....do	20	20.88	.....do .....	.....do .....	.....do	Do.
McKee .....	.....do	20	19.8	May 24, 1898	.....	May 16, 1898	Columbian Iron Works.
Iowa	Sea-going battleship.	16	17.09	June 22, 1897	Dec. 1, 1897	June 16, 1897	Wm. Cramp & Sons.
Nashville....	Gunboat...	14	16.30	June 25, 1897	Nov. 19, 1897	Aug. 19, 1897	Newport News Co.
Marietta.....	.....do	12	13.02	Aug. 6, 1897	Dec. 10, 1897	Sept. 1, 1897	Union Iron Works.
Wheeling.....	.....do	12	12.88	.....do	Dec. 16, 1897	Aug. 10, 1897	Do.
Newport.....	.....do	12	12.29	July 8, 1897	Nov. 19, 1897	Oct. 5, 1897	Bath Iron Works.
Vicksburg....	.....do	12	12.71	.....do	Dec. 2, 1897	Oct. 23, 1897	Do.
Festo.....	Torpedo ...	24.5	24.53	July 28, 1897	Dec. 1, 1897	Aug. 7, 1897	Columbian Iron Works.

CONTRACTS FOR NEW VESSELS.

Battle ships.—The Department, in issuing circulars and plans for the three battle ships authorized at the last session of Congress, concluded practically to duplicate the *Illinois* class as regards size, speed, armament, etc. It was decided later to invite bidders to submit designs of their own, preference being offered, other things being equal, to bids guaranteeing the highest rate of speed and greatest coal endurance, without exceeding certain limits as to weight of engines, boilers, and coal, and the space allowed for the same. As a result proposals were received for 18-knot vessels of about 1,000 tons greater displacement than the Department design, the only material change being an increase

of 20 feet in length and such alterations in the design of boilers and engines as were necessary to meet the additional requirements of power on the weight allowed. After some revision and preliminary development of the new designs, contracts were made for these vessels, a clause being inserted which permitted certain changes in armor and armament, without additional cost to the Government, provided the same were made within six months from the date of the contract.

The maximum coal capacity of these vessels will be 2,000 tons, and the vessels will be tried on a displacement of 12,500 tons, carrying 1,000 tons of coal, 450 tons of ammunition, and 675 tons of equipment and stores, under which conditions the guaranteed speed of 18 knots must be maintained for four consecutive hours. The contract time for the new battle ships is thirty-three months.

Monitors.—Bids for the monitors were invited on Department plans only, which provided for vessels of about 2,700 tons normal displacement. The contract trial speed is 12 knots and the contract time of completion twenty-seven months.

No firm offered to build more than one of these vessels, and contracts were awarded to the lowest four bidders. Special consideration was offered to bids guaranteeing completion in less time than the twenty-seven months fixed as the maximum contract period. The only material reduction in time offered was to twenty months, in the case of one firm, whose price, however, was prohibitory. The design of these vessels contemplates carrying, on the mean normal draft of 12 feet 6 inches, the full supply of 200 tons of coal, all stores and ammunition, and 10 tons of spare feed water.

The bids for the construction of the monitors were so low and leaves so large a residue of the appropriation for them, that the Department is now in correspondence with the contractors with a view to increasing their size and efficiency at such an increased price as the appropriation will permit.

Torpedo boats and torpedo-boat destroyers.—Proposals for the building of these vessels were invited under two classes—class 1 being on plans and specifications issued by the Department, and class 2 on designs submitted by the bidders. In all cases the size was fixed within certain limits governed by the provisions of the act of Congress appropriating for the vessels. The minimum speed for torpedo boats was fixed at 26 knots and for the destroyers at 28 knots; the contract time in the case of the former being limited to one year and in the latter to eighteen months. Special consideration was offered to bids guaranteeing an increase in speed or a reduction in the contract period. The bidding was very satisfactory, a few firms confining themselves either to the Government plans or to their own designs, but a number offering alternative bids under both classes.

No offer to complete within a period shorter than that specified was made, but rates of speed from two to three knots greater than the lower limit fixed were guaranteed in a number of cases. With the

exception of three boats, awarded to the Bath Iron Works, all the torpedo boats have been contracted for on Department plans. Several firms have been awarded contracts who have not as yet had experience in this particular line of work.

Training vessel for the Naval Academy.—This vessel, named the *Chesapeake*, is now in construction.

Gunboat for the lakes.—Plans for this vessel are in preparation, and a contract will be made as soon as arrangements under existing treaties will permit.

The contracts for the following new ships were awarded to the lowest bidders who complied with the requirements, as follows:

Name.	Contractor.	Contract price.	Remarks.
<i>Battle ships.</i>			
No. 10. Maine.....	Wm. Cramp & Sons	\$2,885,000	Contractors' plans.
No. 11. Missouri	Newport News Shipbuilding Co	2,885,000	Do.
No. 12. Ohio	Union Iron Works	2,880,000	Do.
<i>Monitors.</i>			
No. 7. Arkansas	Newport News Shipbuilding Co	880,000	Government plans.
No. 8. Connecticut.....	Bath Iron Works	882,000	Do.
No. 9. Florida	Lewis Nixon	825,000	Do.
No. 10. Wyoming.....	Union Iron Works	875,000	Do.
<i>Torpedo-boat destroyers.</i>			
No. 1. Bainbridge	Nease & Levy	283,000	Government plans.
No. 2. Barry .....	.....do.....	283,000	Do.
No. 3. Chauncey.....	.....do.....	283,000	Do.
No. 4. Dale	Wm. R. Trigg Co	280,000	Do.
No. 5. Decatur .....	.....do.....	280,000	Do.
No. 6. Hopkins.....	Harlan & Hollingsworth Co	291,000	Contractors' plans.
No. 7. Hull .....	.....do.....	291,000	Do.
No. 8. Lawrence.....	Fore River Engine Co	281,000	Do.
No. 9. Macdonough .....	.....do.....	281,000	Do.
No. 10. Paul Jones	Union Iron Works	285,000	Government plans, slightly modified.
No. 11. Perry .....	.....do.....	285,000	
No. 12. Preble .....	.....do.....	285,000	
No. 13. Stewart.....	Gas Engine and Power Co	282,000	Government plans.
No. 14. Truxtun.....	Maryland Steel Co	286,000	Contractors' plans.
No. 15. Whipple.....	.....do.....	286,000	Do.
No. 16. Worden .....	.....do.....	286,000	Do.
<i>Torpedo boats.</i>			
No. 24. Bagley.....	Bath Iron Works	161,000	Contractors' plans.
No. 25. Barney.....	.....do.....	161,000	Do.
No. 26. Biddle.....	.....do.....	161,000	Do.
No. 27. Blakely	Lawley & Son	159,400	Government plan.
No. 28. De Long .....	.....do.....	159,400	Do.
No. 29. Nicholson.....	Lewis Nixon	165,000	Do.
No. 30. O'Brien .....	.....do.....	165,000	Do.
No. 31. Shubrick.....	William R. Trigg Co	129,750	Do.
No. 32. Stockton.....	.....do.....	129,750	Do.
No. 33. Thornton .....	.....do.....	129,750	Do.
No. 34. Tingey.....	Columbian Iron Works	168,000	Do.
No. 35. Wilkes.....	Gas Engine and Power Co	146,000	Do.

Including the vessels authorized at the last session of Congress, there are now under construction the following:

Battle ships (first-class)	8
Coast-defense monitors.....	4
Training vessel	1
Sheathed cruiser (building in England).....	1
Steel tugs.....	2
Torpedo-boat destroyers.....	16
Torpedo boats	22
Submarine boat.....	1
Total	55

The names of the vessels under construction, where building, contract speed, and probable date of completion are given in the following table:

No.	Name of vessel.	Where building.	Contract speed.	Probable date of completion.
	<i>Battleships.</i>		<i>Knots.</i>	
5	Kearsarge	Newport News.....	16	Aug., 1899
6	Kentucky .....	.....do	16	Do.
7	Illinois <i>a</i>.....	.....do	16	Apr., 1900
8	Alabama <i>a</i>	Cramp & Sons	16	Sept. 24, 1899
9	Wisconsin <i>a</i>	Union Iron Works.....	16	Sept. 1, 1899
10	Maine <i>b</i>	Cramp & Sons	18	June 1, 1901
11	Missouri <i>b</i>	Newport News	18	June 11, 1901
12	Ohio <i>b</i>	Union Iron Works.....	18	June 5, 1901
	<i>Sheathed cruiser.</i>			
	Albany	Armstrong's, England	20	
	<i>Monitors.</i>			
7	Arkansas <i>b</i>	Newport News	12	Jan. 11, 1901
8	Connecticut <i>b</i>	Bath Iron Works.....	12	Jan. 19, 1901
9	Florida <i>b</i>	Lewis Nixon.....	12	Oct. 11, 1900
10	Wyoming <i>b</i>	Union Iron Works.....	12	Jan. 5, 1901
	<i>Torpedo-boat destroyers.</i>			
1	Bainbridge <i>b</i>	Neafie & Levy.....	28	Apr. 1, 1900
2	Barry <i>b</i> .....	.....do	28	Do.
3	Chauncey <i>b</i> .....	.....do	28	Do.
4	Dale	Wm. R. Trigg Co.....	28	
5	Decatur .....	.....do	28	
6	Hopkins <i>b</i>	Harland & Hollingsworth	29	Apr. 19, 1900
7	Hull .....	.....do	29	Do.
8	Lawrence <i>b</i>	Fore River Engine Co	30	Jan. 29, 1900
9	MacDonough <i>b</i>.....	.....do	30	Feb. 28, 1900
10	Paul Jones <i>b</i>	Union Iron Works.....	29	Apr. 5, 1900
11	Perry <i>b</i> .....	.....do	29	Do.
12	Preble <i>b</i>.....	.....do	29	Do.
13	Stewart <i>b</i>	Gas Engine and Power Co.....	29	Feb. 28, 1900
14	Truxtun <i>b</i>	Maryland Steel Co.....	30	Apr. 4, 1900
15	Whipple <i>b</i> .....	.....do	30	Do.
16	Worden <i>b</i>.....	.....do	30	Do.

a The probable date of final completion of the *Illinois*, *Alabama*, and *Wisconsin* is based on the supposition that armor will be provided in due season.
b The date of "probable completion" given is that named in the contract.

No.	Name of vessel.	Where building.	Contract speed.	Probable date of completion.
<i>Torpedo boats.</i>				
8	Rowan.....	Moran Bros.....	26	Completed, except official trial.
9	Dahlgren	Bath Iron Works.....	30	Feb. 1, 1899
10	T. A. M. Craven.....	do.....	30	Mar. 1, 1899
11	Farragut	Union Iron Works.....	30	Completed, except official trial.
12	Davis.....	Wolff & Zwickler	22.5	Do.
13	Fox.....	do.....	22.5	Dec. 1, 1899
17	Mackenzie.....	Chas. Hibman Co.....	29	Completed, except official trial.
19	Stringham.....	Harlan & Hollingsworth	30	Jan. 29, 1899
20	Goldsborough	Wolff & Zwickler.....	30	In doubt.
21	Bailey	Gas Engine and Power Co.....	30	Feb. 1, 1899
24	Bagley s.....	Bath Iron Works.....	28	Oct. 19, 1899
25	Barney s.....	do.....	28	Do.
26	Biddle s.....	do.....	28	Do.
27	Blakely s.....	Geo. Lawley & Sons	26	Sept. 27, 1899
28	De Long s.....	do.....	26	Do.
29	Nicholson s.....	Louis Nixon	26	Sept. 26, 1899
30	O'Brien s.....	do.....	26	Do.
31	Shubrick	Wm. R. Trigg Co.....	26	
32	Stockton	do.....	26	
33	Thornton	do.....	26	
34	Tingey s.....	Columbian Iron Works.....	26	Oct. 1, 1899
35	Wilkes s.....	Gas Engine and Power Co.....	26.5	Sept. 30, 1899
<i>Training vessel for Naval Academy.</i>				
	Chesapeake	Bath Iron Works.....	Sailing vessel.	June 16, 1899
<i>Submarine torpedo boat.</i>				
1	Plunger	Columbian Iron Works.....	8	In doubt.
<i>Tugs.</i>				
6	Peasecook	Navy-yard, New York	12	Dec. 1, 1899
7	Pawtucket.....	Navy-yard, Mare Island, Cal	12	Do.

a The date of "probable completion" given is that named in the contract.

With the exception of the three battle ships and four monitors last authorized, every vessel in the list of those under construction should be completed by the end of the year 1900.

BUREAU OF STEAM ENGINEERING.

The report of the Engineer in Chief calls attention to the enormous increase in the work of the Bureau, due to the war.

In advance of the declaration of war, orders were given for large amounts of boiler tubes, condenser tubes, and material for the manu-

facture of piping and fittings, which resulted in a material saving of time in the repairs to several ships. Most of the ships added to the Navy required to be supplied with evaporators and distillers, and furnished with an outfit of tools and stores. It was also necessary to overhaul the machinery and make extensive repairs and alterations.

New water-tube boilers were placed in the old monitors *Canonicus*, *Manhattan*, and *Mahopac*, at the League Island yard, which it was determined to utilize for coast defense, and this work was commenced within five hours after authority was given, and was completed in about thirty days.

The Key West Naval Station was fitted out for repair work as rapidly as possible and, although the facilities here were limited, repairs were made to 64 vessels during the fiscal year.

The desirability of having a vessel accompany the fleet thoroughly equipped for making extensive repairs was early apparent, and the *Chatham* was purchased, renamed the *Vulcan*, and the work of installing machine tools, cupola, forges, brass furnaces, etc., was rapidly prosecuted. She carried a force of skilled mechanics and a large outfit of stores. The *Vulcan* joined the fleet at Guantanamo on July 1, and reports up to the end of August showed that she had made repairs to 63 ships and supplied stores to 60. Her usefulness has been universally admitted, and it is the wish of the Department to provide another ship of this character for service in the Pacific, as recommended by the Engineer in Chief.

The severe tests to which the machinery of our vessels have been put during the period of the war have shown the high character of the work, and give renewed confidence to the Department in the efficiency and reliability of our engines and boilers.

The performance of the *Oregon* on her trip from Puget Sound to Key West was so exceptional as to justify a brief reference. Leaving Puget Sound on March 6, she made the long journey of over 14,500 miles to Jupiter Inlet, on the Florida coast, and was not delayed an hour on account of her machinery. The only stops were made for coal. Immediately after coaling at Key West she took her place in the blockading line at Santiago, and in the great battle of July 3 quickly developed a power greater than that attained on her trial trip and a speed only slightly less, easily distancing all the other ships immediately engaged except the *Brooklyn*, and forcing the fleetest of the Spanish cruisers to surrender.

Hardly less gratifying as a test of its machinery was the trip of the *Marietta*. This little vessel of a thousand tons displacement left San Jose de Guatemala on March 16 and arrived at Key West on June 4, having been under steam continuously for nearly three months, during which time she covered a distance of over 13,000 miles. This vessel is fitted with water-tube boilers, and their durability and reliability for long cruises are sufficiently shown by this performance.

WATER-TUBE BOILERS.

The Department has for a number of years recognized the advantages of water-tube boilers, and wherever practicable in new construction this class of boiler has been specified. An exception was made in the case of the new battle ships, which it was at first determined should be identical with the *Alabama* class, and which has cylindrical boilers. Afterwards the Department issued a circular to bidders which encouraged them to submit designs for higher speed and greater endurance, and finally accepted bids on the plans of the contractors, which provided for a ship of a thousand tons greater displacement, an increase of 6,000 horsepower, of 2 knots speed, and much greater coal capacity. This practically makes it certain that water-tube boilers will be used in these vessels, as it will be difficult for the contractors to comply with the requirements unless boilers of this class are installed.

Water-tube boilers were specified for the new coast-defense monitors *Florida*, *Connecticut*, *Wyoming*, and *Arkansas*, and, of course, for the new torpedo boats and destroyers. The use of these boilers has practically become universal for naval vessels, as greater power is secured on less weight, steam is more quickly and readily raised, and they can be replaced or practically rebuilt without disturbing the decks of the vessels, as all parts are small enough to pass through the permanent openings in the ships.

DISTILLING SHIPS.

It early became apparent, as a result of the severe services in southern waters, that an increased supply of fresh water was necessary for the fleet, the evaporating plants of the ships being inadequate to continuously meet the demands for fresh water. To remedy this deficiency the Department determined to provide a distilling ship to accompany the fleet, and selected the *Iris* from the purchased vessels and gave orders to install as rapidly as possible an evaporating and distilling plant with a capacity of between fifty and sixty thousand gallons per day. The war closed before the completion of the *Iris*, but she was used to supply fresh water to the army at Camp Wikoff and has now been detailed to accompany the *Iowa* and *Oregon* to the Pacific.

Upon the recommendation of the Engineer in Chief, a second ship—the *Rainbow*—has been selected as a distilling ship, with a duplicate plant to that of the *Iris*.

BUREAU OF SUPPLIES AND ACCOUNTS.

The report of the Paymaster-General covers the financial operations of the Navy for the fiscal year ending June 30, 1898.

The total credits under all naval appropriations amounted to	\$137, 042, 869. 72
The total debits were	58, 743, 929. 37
Leaving a balance on June 30 of	78, 298, 940. 35

The Bureau of Supplies and Accounts makes all purchases for the Navy, directs all shipments of supplies, and maintains accounts covering the entire Naval Establishment. It performs the duties which under the War Department are performed by the Pay, Quartermaster, and Commissary departments.

Early in March a base of supplies was established at Key West, and stores for 8,000 men for three months were kept constantly on hand. At the Mare Island and Norfolk yards supplies for 4,000 men for the same length of time were assembled and maintained, while similar provision was made for 9,000 men at New York.

In anticipation of hostilities the commander in chief of the Asiatic Squadron was authorized early in April to purchase a collier and supply ship, and within forty-eight hours thereafter the ships were purchased and the latter loaded with provisions for five months. Later the *City of Peking* was chartered and sent from San Francisco with three months' provisions for the Asiatic fleet and a large consignment of miscellaneous stores, and a refrigerating ship was sent in June to Manila with fresh meats and vegetables.

In order to supply fresh provisions to the fleet in Cuban waters the refrigerating ships *Supply*, *Celtic*, and *Glacier* were purchased, loaded with fresh meats, vegetables, fruit, ice, etc., and sent to the different vessels of the fleet under Admiral Sampson.

It is worthy of note that, notwithstanding the immense amount of supplies purchased immediately preceding and during the war and the necessity of expedition, the contractors were held to specifications, the prices paid were no higher than before the emergency arose, and the work of the Bureau was performed with the most gratifying efficiency and promptness.

BUREAU OF MEDICINE AND SURGERY.

The annual report of the Surgeon-General shows the preparation and operations of the Bureau during the war with Spain. All the hospitals were fully equipped and all vessels furnished with medical and surgical appliances for war. An ambulance ship, the *Solace*, was purchased and fitted out under the requirements of the Geneva Convention, and has been in constant service, bringing the sick and wounded of the navy to northern naval hospitals, and, whenever practicable, the sick and wounded of the army to army hospitals. This vessel marks a new departure in the care of the sick and wounded in naval warfare. With comfortable accommodations for two hundred patients, and fitted with all the appliances for modern antiseptic surgery, a steam disinfecting apparatus, an ice machine, a steam-laundry plant, and cold-storage rooms, she affords every convenience of the modern hospital, and the fact that but one of our wounded died in consequence of his wounds speaks for its efficiency.

All the wounded from the Spanish vessels in the battle of July 3 were taken by the *Solace* to the naval hospital at Norfolk, Va., and temporary hospitals were built at Portsmouth, N. H., to receive the sick of the Spanish naval prisoners landed at Seaveys Island.

Forty-three volunteer medical officers were appointed after examination to meet the increased requirements of the service, and one of their number, Asst. Surg. John Blair Gibbs, was killed in action at Guantanamo while serving with the Marine Battalion.

The Hospital Corps of the Navy, established by act of June 17, 1898, is in successful operation, and will prove of marked benefit by putting in the medical department a body of trained men, who, by reason of the hope of promotion and permanent employment, will remain in the service.

The casualties of the Navy are shown in the following table:

	Number of casualties.	Killed.	Wounded.	Died subsequently as result of wounds.	Discharged to return to duty.	Invalided from service.	Continued under treatment.
Action of Manila Bay.....	9	0	9	0	9	0	0
Action off Cienfuegos.....	12	1	11	1	9	0	1
Action off Cardenas.....	8	5	3	0	3	0	0
Action off San Juan, Porto Rico.....	8	1	7	0	6	1	0
Engagement at Guantanamo, Cuba.....	22	6	16	0	9	3	4
Engagement off Santiago (June 22)....	10	1	9	0	7	1	1
Engagement off Santiago (July 3).....	11	1	10	0	10	0	0
Miscellaneous:							
Eagle (July 12).....	1	0	1	0	1	0	0
Rancroft (Aug 2).....	1	1	0	0	0	0	0
Amphitrite (Aug 6).....	1	1	0	0	0	0	0
Yankee (Aug. 11).....	1	0	1	0	0	1	0
Total.....	84	17	87	1	54	6	6

MISCELLANEOUS RECEIPTS.

A detailed statement, prepared in the office of the Auditor for the Navy Department, will be found in the Appendix, showing deposits in the Treasury from November 1, 1897, to November 1, 1898, arising from the sale of condemned stores, materials, nautical books and charts, fuel, clothing; from rents of Government property; from supplies furnished to other branches of the Government, and from other lawful disposition of public property under the cognizance of the Navy Department.

The total amount so deposited was \$125,905.94, of which sum \$26,536.89 was covered into the Treasury as "Miscellaneous receipts on account of proceeds of public property," as required by section 3618 of

the Revised Statutes, and the remainder, \$99,369.05, carried as authorized by law to the credit of the proper appropriations to be applied to naval purposes.

SALE OF CONDEMNED VESSEL.

Since the date of the last annual report of this Department the U. S torpedo ram *Alarm*, at the navy-yard, New York, condemned as unfit for further service and stricken from the Navy Register in pursuance of section 2 of the act of August 5, 1882 (Stat. L., vol. 22, p. 296), has been reappraised and disposed of at public sale in accordance with section 5 of the act of March 3, 1883 (Stat. L., vol. 22, p. 599).

The *Alarm* was first appraised April 16, 1897, by a board of survey and appraisal, at \$12,000, and advertised for sale at that time to the highest bidder above her appraised value; but at the time fixed for the opening of bids no offer for her purchase was received. The board of survey and appraisal was thereupon reconvened for the purpose of surveying and reappraising the *Alarm*. It reported that the vessel was salable only, in her then condition, as scrap metal. The board recommended the removal of certain machinery and fittings from the vessel, and upon the removal of such material appraised the vessel at \$800. Proposals were again invited February 2, 1898, for the purchase of the *Alarm*, authority having been previously obtained from the President to dispose of the vessel, if necessary, without limiting the price to its appraised value. Pursuant to the Department's advertisement the following proposals were received February 23, 1898, viz:

John Hennessy, New York City	\$1,575.00
Wm. J. Bannerman, Brooklyn, N. Y	2,177.77
Henry A. Hitner's Sons, Philadelphia, Pa.....	2,905.50
John W. Sullivan, Brooklyn, N. Y.....	1,000.00
Walsh's Sons & Co., Newark, N. J.....	1,131.76
John H. Gregory, Perth Amboy, N. J.....	2,111.00

The bid of Messrs. Henry A. Hitner's Sons, Philadelphia, the highest received, was accepted.

The expense of twice advertising the sale of the *Alarm* was \$111.55, and the balance of the proceeds arising from the sale of the vessel, \$2,793.95, has been covered into the Treasury, in accordance with section 3618 of the Revised Statutes, as "Miscellaneous receipts on account of proceeds of public property."

NATIONAL DEFENSE AND EMERGENCY FUND.

It is gratifying to the Department to be able to report that of the appropriation of \$50,000,000 "for the national defense," to be expended at the discretion of the President (act approved March 9, 1898), \$29,973,274.22 was allotted to the Navy Department, of which sum \$618,447.17 is reported by the Bureaus as not obligated, and it is expected will revert to the Treasury January 1, 1899.

Of the appropriations of \$10,000,000, approved June 8, 1898, and \$15,000,000, approved July 7, 1898, making a total of \$25,000,000 for the Navy Department for an emergency fund to meet unforeseen contingencies, etc., there has been allotted \$3,168,865.19. Of this amount \$407,631.26 has not been obligated, leaving a balance November 16, 1898, of \$21,423,503.55, which it is expected will revert to the Treasury January 1, 1899.

Of the appropriation of \$3,000,000, providing for the organization and enrollment of the United States auxiliary naval force, there remains a balance, November 16, 1898, of \$2,274,236.79 not obligated. Thus it will be seen that of the total appropriated for the emergency fund and the auxiliary naval force, \$28,000,000, there remains, not obligated, \$23,697,740.34, which under existing conditions will revert to the Treasury January 1, 1899.

There is also to be put to the credit of the Navy Department the sum of \$739,943.70, being the amount agreed to be reimbursed by the War Department for the use of the chartered steamers *St. Paul*, *St. Louis*, *Harvard*, and *Yale* for the transportation of troops.

Summary.	Amount.	Not obligated.
<i>For the national defense.</i>	.	
Allotted by the President for the Navy Department.....	\$29,973,274.22	\$618,447.17
Emergency fund: Appropriated by Congress.....	25,000,000.00	21,423,503.55
Auxiliary naval force: Appropriated by Congress.....	3,000,000.00	2,274,236.79
	57,973,274.22	24,316,187.51
Navy Department to be reimbursed by War Department for chartered steamers for transportation of troops		739,943.70
Total, which it is expected at this date, November 15, 1898, will revert to the Treasury January 1, 1899.....		25,056,131.21

Appropriations, expenditures, and balances for the fiscal year ending June 30, 1898.

Title of appropriation.	Appropriations for fiscal year 1898, exclusive of public works.	Amounts drawn in fiscal year 1898.	Balances June 30, 1898.
General establishment:			
Pay of the Navy	\$8,235,385.00	\$7,270,501.74	\$964,883.26
Pay, miscellaneous.....	300,000.00	297,274.07	2,725.93
Contingent, Navy.....	7,000.00	2,997.04	4,002.96
Bureau of Yards and Docks:			
Maintenance	275,000.00	255,255.82	19,744.18
Repairs and preservation, navy-yards.....	440,000.00	379,395.02	60,604.98
Civil establishment	67,110.44	65,316.50	1,793.94
Contingent.....	15,000.00	14,999.07	.93
Naval Home, Philadelphia, Pa	78,725.00	68,804.78	9,920.22
Bureau of Equipment:			
Equipment of vessels	1,558,117.00	1,557,574.16	542.84
Civil establishment	15,525.00	15,524.98	.02
Contingent.....	15,000.00	13,008.83	1,991.17
Naval Observatory.....	5,000.00	4,952.23	47.77

Appropriations, expenditures, and balances for the fiscal year ending June 30, 1898—Cont'd.

Title of appropriation.	Appropriations for fiscal year 1898, exclusive of public works.	Amounts drawn in fiscal year 1898.	Balances June 30, 1898.
Bureau of Navigation :			
Pay, Naval Academy.....	\$106,401.45	\$106,339.87	\$61.58
Repairs, Naval Academy.....	21,000.00	18,970.65	2,029.35
Heating and lighting, Naval Academy.....	20,000.00	17,098.74	2,901.26
Special course, Naval Academy	3,600.00	2,521.49	478.51
Contingent, Naval Academy	43,800.00	38,293.27	5,506.73
Naval War College and Torpedo School.....	11,200.00	8,771.72	2,428.28
Naval Training Station	30,000.00	29,409.86	590.14
Gunnery exercise	6,000.00	5,207.22	792.78
Transportation, recruiting, and contingent.....	45,000.00	41,929.69	3,070.31
Ocean and lake surveys	14,000.00	13,369.87	630.13
Outfits for naval apprentices	33,750.00	28,498.20	5,251.80
Naval station, Newport, R. I.....	1,000.00	751.39	248.61
Bureau of Ordnance :			
Ordnance and ordnance stores	700,000.00	447,228.35	252,771.65
Repairs	30,000.00	25,708.46	4,291.54
Civil establishment	29,324.00	28,137.60	1,186.40
Contingent.....	15,000.00	14,987.66	12.34
Torpedo Station	71,500.00	58,150.89	13,349.11
Bureau of Construction and Repair :			
Construction and repair.....	2,100,000.00	1,939,821.11	160,678.89
Civil establishment	19,972.50	19,256.06	716.44
Bureau of Steam Engineering :			
Steam machinery.....	985,000.00	971,610.11	13,389.89
Civil establishment	11,900.00	11,844.85	55.15
Contingent.....	1,000.00	652.73	347.27
Bureau of Supplies and Accounts :			
Provisions	1,405,000.00	1,403,605.24	1,394.76
Civil establishment	70,432.03	66,215.14	4,216.89
Contingent.....	50,000.00	49,978.92	21.08
Bureau of Medicine and Surgery :			
Medical department.....	75,000.00	70,908.70	4,091.30
Repairs	20,000.00	15,171.02	4,828.98
Contingent.....	30,000.00	21,965.87	8,034.13
Naval hospital fund.....	20,000.00	20,000.00	.....
Ambulances for naval hospitals.....	1,200.00	1,200.00	.....
Naval cemetery, Brooklyn, N. Y.....	1,000.00	.....	1,000.00
Marine Corps :			
Pay	764,140.20	716,358.07	47,782.13
Clothing.....	97,255.00	96,623.18	631.82
Provisions	100,000.00	86,283.01	13,716.99
Fuel.....	19,500.00	12,206.08	7,293.92
Repairs of barracks	45,600.00	19,314.80	26,285.20
Military stores	13,297.00	11,926.90	1,370.10
Transportation and recruiting.....	15,000.00	13,930.10	1,069.90
Forage	3,000.00	1,397.49	1,602.51
Hire of quarters.....	6,996.00	5,283.86	1,712.14
Contingent.....	33,700.00	29,537.03	4,162.97
Total.....	18,081,830.62	16,415,569.42	1,666,261.20

The appropriations for current expenses for the fiscal year ending

June 30, 1898, exclusive of public works, amounted to.....	\$18, 081, 830. 62
Drawn by requisitions to June 30, 1898.....	16, 415, 569. 42

Balances July 1, 1898	1, 666, 261. 20
Drawn by requisitions from July 1, 1898, to October 31, 1898	1, 330, 236. 41

Balances November 1, 1898	336, 024. 79
Add balances in the hands of disbursing officers at same date.....	409. 83

Available balances November 1, 1898.....	336, 434. 62
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The foregoing statement embraces all expenditures from the annual appropriations made for the fiscal year 1898.

The appropriations for the fiscal year 1899 having been made immediately available by the act of May 4, 1898, the following amounts were drawn from these appropriations during the fiscal year 1898:

Pay, miscellaneous.....	\$13, 076. 62
Maintenance yards and docks	3, 305. 27
Repairs and preservation, navy-yards	11, 669. 33
Equipment of vessels	103, 631. 44
Naval Observatory.....	235. 68
Repairs, Naval Academy	1, 400. 00
Transportation, recruiting and contingent, navigation.....	3, 550. 00
Ordnance and ordnance stores.....	1, 400. 00
Contingent, ordnance	41. 75
Construction and repair.....	534, 093. 41
Steam machinery	111, 559. 00
Provisions, Navy	301, 565. 38
Contingent, supplies and accounts	175. 10
Repairs, medicine and surgery	18. 00
Contingent, medicine and surgery.....	148. 00
Pay, provisions, etc., Marine Corps	52, 468. 70
Clothing, Marine Corps.....	4, 605. 16
	<hr/>
	1, 142, 942. 84

There was also expended in the fiscal year ending June 30, 1898, for national defense, Navy.....

	20, 622, 415. 20
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Total.....	21, 765, 358. 04
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Comparative statement of estimates and appropriations, 1899-1900, naval establishment.

Navy Department.	Estimates, 1899.	Appropri- ated, 1899.	Estimates, 1900.	Increase of estimates for 1900 over amount ap- propriated for 1899 for same pur- pose.	Decrease of estimates for 1900 as com- pared with amount ap- propriated for 1899 for same pur- pose.	New items, 1900.
Pay of the Navy.....	\$8,449,060.00	\$17,955,480.00	\$12,726,440.00	.....	\$5,229,020.00	.....
Pay, miscellaneous ...	300,000.00	400,000.00	500,000.00	\$100,000.00	.....	.....
Contingent, Navy	7,000.00	7,000.00	20,000.00	13,000.00	.....	.....
Bureau of Navigation	597,575.00	745,175.00	495,125.00	202,250.00	452,300.00	\$125,000.00
Naval Academy	234,577.45	232,978.45	196,453.45	1,262.00	38,777.00	.....
Bureau of Ordnance ..	9,064,551.00	8,519,551.00	2,475,124.00	894,800.00	6,939,227.00	122,800.00
Bureau of Equipment.	8,074,153.40	8,115,153.40	2,615,465.10	637,276.70	6,338,975.00	1,800.00
Bureau of Yards and Docks	392,710.44	442,710.44	463,442.22	12,453.26	1,721.50	12,183.80
Public works:						
Yards and docks..	5,044,612.50	4,908,012.50	5,883,599.00	5,038,599.00	4,063,012.50	4,729,899.00
Naval Academy ..	.....	500,000.00	2,120,000.00	1,620,000.00	.....	1,620,000.00
Naval Observa- tory	24,200.00	11,200.00	10,000.00	5,000.00	6,200.00	.....
Bureau of Medicine and Surgery	361,000.00	353,100.00	192,500.00	46,500.00	207,100.00	45,000.00
Bureau of Supplies and Accounts.....	1,525,432.03	3,175,432.03	3,220,432.03	95,000.00	50,000.00	.....
Bureau of Construc- tion and Repair.....	3,143,007.00	10,664,407.00	5,423,407.00	730,000.00	7,871,000.00	225,000.00
Bureau of Steam En- gineering	1,167,900.00	6,427,900.00	1,207,900.00	165,000.00	5,385,000.00	65,000.00
Marine Corps	1,191,906.13	1,945,154.13	1,368,971.27	106,042.14	666,225.00	61,000.00
Increase of the Navy:						
Construction and machinery	3,970,473.00	12,648,473.00	5,992,402.00	.....	7,656,071.00	.....
Armor and arma- ment	4,254,800.00	7,162,800.00	4,000,000.00	.....	3,162,800.00	.....
Equipment	215,000.00	415,000.00	200,000.00	.....	215,000.00	.....
Auxiliary naval force.	.....	3,000,000.00	.....	.....	3,000,000.00	.....
Emergency fund.....	.....	25,000,000.00	.....	.....	25,000,000.00	.....
Grand total	45,539,993.45	113,529,506.95	47,096,251.08	9,869,173.13	76,200,429.00	7,029,634.80

CIVIL EMPLOYEES.

Summary of labor board reports for the year ending August 31, 1896, and comparison of totals for 1897.

Navy-yards.	Number of applications for employment.	Rejected by the labor board as not eligible under the rules.	Called for by heads of labor departments.	Certified for employment to heads of labor departments.	Rejected by heads of departments as not qualified.	Declined service.	Failed to report for employment.
Portsmouth	855	2	714	710	2	9	120
Boston	3,545	48	2,423	2,300		6	400
New York	9,086	80	4,340	6,280	58	58	1,400
Langue Island	5,178	2	2,630	3,243	4	21	400
Washington	3,081	5	2,310	2,310	88	68	461
Norfolk	4,420	105	2,028	2,006	8	4	543
Mare Island	4,306	2	3,232	3,212	15	16	797
Total, 1896	31,254	305	22,367	21,152	170	182	4,314
Total, 1897	16,230	105	6,538	6,000	49	62	951
Increase, 1896 over 1897	15,024	200	15,829	14,452	121	120	3,362

During the past nine months the practicability of the system of employing laborers and mechanics at navy-yards through the boards of labor employment has been given a severe test. The force was approximately doubled within a period of sixty days after February 15, 1896, and in all trades, with the exception of machinist, mechanics were secured promptly. The demand for competent machinists exhausted the registration lists on several occasions, and after advertising in the press that this class of mechanics was needed a sufficient number did not register to meet the demand at two or three of the yards.

It has been the policy of the Administration to give preference to those persons who served in the military or naval service during the civil war. The same preference will be given to persons who served in the Spanish-American war. Those who served in foreign waters or on foreign soil will be accorded preference as veterans, and those who served in the United States or its waters, who did not reach the front, will be given preference next after veterans, provided, of course, that as a preliminary to registration they present an honorable discharge.

LEGISLATION RECOMMENDED.

The Department desires to call attention to the recommendations in the report of the Judge-Advocate-General of the Navy for certain legislation which in the interest of the service should be enacted.

CIVILIAN WITNESSES.

First. That authority be given naval courts-martial and courts of inquiry to summon and obtain the testimony of civilian witnesses. The Senate at the last session of Congress passed an act giving this power to naval courts, and providing, in case of contempt, that the president of such naval court may certify the offense to the nearest United States court for its action, in like manner as if the offense had been committed in a proceeding before that court. This bill only awaits the action of the House of Representatives. The enactment of this measure into law will enable offenders to be punished in many instances where conviction is now impossible.

DEPOSITIONS.

Second. That naval courts be empowered to use, under proper restrictions, the depositions of witnesses in like manner as is done under article 91 of the Articles of War in cases before military courts. Such legislation is especially desirable for the Navy, as witnesses whose testimony is necessary are frequently on duty at distant points. A bill embodying the views of the Department in this matter was introduced in the House at the last session of Congress.

REMOVAL OF CHARGE OF DESERTION.

Third. That the act of August 14, 1888, authorizing the Secretary of the Navy, for a period of five years from its date, to remove the charge of desertion in certain cases, be reenacted without the limitation as to time. A bill having this object in view was introduced in the House at the last session and referred to the Committee on Naval Affairs, but seems never to have been reported. It provides a simple act of justice to our veteran sailors and marines who are now, in their old age, debarred from certain privileges which they should have, and removes the stain of desertion from their records.

THIRTY YEARS' SERVICE.

Fourth. That enlisted men in the Navy who have served for thirty years be given the benefits of retirement, as now allowed to the enlisted men in the Army and Marine Corps. A bill having this object in view

passed the Senate at the first session of the present Congress and now awaits the action of the House of Representatives. This matter is fully dealt with in the report of the Department under the head of "Personnel."

EXAMINING AND RETIRING BOARDS.

Fifth. That the provisions of the act of August 1, 1890, relating to the examination of officers of the Army for promotion, should be made applicable to the Navy. It provides that an examining board shall resolve itself at once into a retiring board in cases where the candidate for promotion is found physically disqualified.

CLASSIFICATION OF VESSELS.

Sixth. That sections 1529 and 1530 of the Revised Statutes, specifying the classification of the vessels of the Navy, be repealed, as the classification therein provided relates to vessels which have now become obsolete. The general division of naval vessels into classes, upon the basis of tonnage, would be much more satisfactory, and would be applicable to present conditions.

PATENTS BY OFFICERS.

Seventh. That provision be made for the use by the Government of improvements patented by officers of the Navy, leaving the question of compensation to the determination of the courts. The Senate at its last session passed a measure having this object in view, but it failed in the House.

INCREASE OF PAY CORPS.

The Department approves the recommendation of the Paymaster-General that authority be given to appoint additional officers in the Pay Corps.

EXAMINATION OF CHIEF ENGINEERS FOR PROMOTION.

Chief engineers may have four grades of relative rank—lieutenant, lieutenant-commander, commander, or captain—but at present are examined only for the lowest grade. It is recommended that an examination be required for each of the grades of chief engineer, in order that at frequent intervals the physical condition and professional qualifications of these officers may be determined.

NAVAL SUPPLY FUND.

The promptness and economy with which supplies were furnished in the rush incident to the war were largely due to the naval supply fund. This fund has now been in operation for five years, and its value and utility have been thoroughly demonstrated. It has been increased from time to time, upon the recommendations of the bureaus

and of the Department, and is now \$1,500,000. It is believed that, in the interest of economy and efficiency, this fund should be still further enlarged, so as to enable the Bureau of Supplies and Accounts to carry such a large and varied stock of ordinary commercial articles as the needs of a growing Navy demand. It is therefore recommended that authority be granted to increase the naval supply fund to \$2,500,000.

PAY OF THE NAVY DEPOSIT FUND.

The recommendation made in my last annual report is renewed, that the act of Congress approved January 9, 1898, "An act to provide for the deposit of savings of seamen of the United States Navy," be made applicable to the Marine Corps.

SALE OF VESSELS.

Provision should be made, giving authority to sell vessels purchased for the war, which are no longer of use.

PROFESSORS OF MATHEMATICS.

The recommendation made in my last annual report is renewed, that the statute authorizing the appointment of professors of mathematics be so amended that, without disturbing those who now hold office, no further appointments shall be made. The reasons for this recommendation are fully set forth on page 24 of my last annual report. It is an indefensible discrimination that this favored class, exposed to no military or naval hazard, should enjoy a pension which is not given to other civilians.

Attention is also directed to the fact that if this recommendation is adopted it will be necessary to provide for the appointment of astronomers at the Naval Observatory to take the places, as they shall become vacant, of existing professors of mathematics who now serve in that capacity.

TRANSPORT SERVICE.

In view of the difficulties which have been encountered in the transportation of troops by sea in the recent war, it is recommended that the transport service be put under the control of the Navy Department. The recent experiences in the convoying of troops from Tampa to Santiago de Cuba and from San Francisco to the Philippine Islands, and the landing of troops and supplies, make it evident that we should follow the universal practice in foreign countries of placing this work in the hands of naval officers.

To make the transport service efficient it must necessarily be carried on in vessels large enough to carry a complete infantry regiment, with all accouterments, arms, ammunition, supplies, etc., landing at their destination in as good or better condition than when received on board. It is believed that this can best be accomplished by placing the responsibility in the hands of people who are accustomed to handling and caring for large bodies of men on board ship.

If this recommendation commends itself to Congress, provision should be made for the construction of two transports, one for the Atlantic and one for the Pacific coast.

NAVAL RESERVE.

The experience of the war has demonstrated the necessity of establishing a national naval reserve, to be recruited from those who served in the Navy during the recent war and from the various seafaring classes, to be maintained by Federal appropriations, and to be subject to the call of the National Government in time of war.

The Department has drawn a bill which provides for the organization of such a reserve and will submit it to Congress.

CORPS OF JUDGE-ADVOCATES.

Naval jurisprudence is a distinct branch of the law. It requires study and experience, and for its efficient and successful administration a trained corps of officers who can devote themselves wholly to it. The present practice of the Department is to detail officers for duty under the Judge-Advocate-General from any branch of the service, but these officers are without the training and experience in the law which are important to the proper administration of justice. The time has come when the subject is of such importance as to justify the creation of a small judge-advocate's corps upon a basis as to organization corresponding to that now existing in the Army.

The efficiency of such a corps would, in the opinion of the Department, be materially promoted if it were provided that appointments might be made from the service or from civil life, at the discretion of the appointing power, persons only being eligible who are learned in both civil and military law, promotions to be made according to relative seniority as vacancies occur.

The duties which devolve upon the office of the Judge-Advocate-General of the Navy are of great importance to the Department. He is the legal adviser of the Secretary of the Navy, has the drawing up and making of all contracts for the construction of vessels, the manufacture of armor, etc., and has direct charge of all matters involving the administration of justice in the Navy. The work of the office of the Judge-Advocate-General has steadily increased, and is of such an important nature and so efficiently performed as to merit the approval of the Department.

NAVAL INTELLIGENCE OFFICE.

The office of Naval Intelligence has, for a number of years, performed duties of an important nature, but has not received legislative recognition.

The work of this office mainly consists in collecting and classifying information regarding the growth and progress of foreign navies, and

their materiel, construction, and personnel; the defenses of foreign ports, and all information which may be of value to the Navy in the event of hostilities.

Under this office the Department maintains at the principal capitals of the world a number of naval attaches who furnish to the Office of Naval Intelligence all the information obtainable in relation to naval progress abroad. The work of arranging, classifying, and cataloguing this information in such a manner as to render it quickly obtainable requires a high degree of ability. The recommendation of the Chief of the Naval Intelligence Office for appropriations for the clerical force employed under him is commended.

PERSONNEL.

It is the earnest desire of the Department that House bill No. 10403, which was presented to the House of Representatives by the Naval Committee at the last session of Congress, be promptly taken up on the reassembling of Congress and passed. This bill was reported to the House as a substitute for House bill No. 7443, which was drafted by a board appointed by the Department, consisting of the then Assistant Secretary of the Navy, Hon. Theodore Roosevelt, as chairman, and a number of officers of the line and the engineer corps as members.

The bill provides—

1. For the amalgamation of the officers of the line and the Engineer Corps of the Navy.
2. For an increase of 99 officers in the new line of the Navy.
3. For a regular and constant flow of promotion.
4. For a readjustment of the numbers in the different grades of the construction corps.
5. For the retirement of officers who served creditably during the civil war in the next higher grade.
6. For a change in the title of naval cadet to that of midshipman.
7. That the course at the Naval Academy be decreased from six to four years.
8. For the appointment of 100 warrant machinists.
9. That the pay of the new line of the Navy shall be the same as that of officers of the Marine Corps or infantry of the Army.
10. That the term of enlistment be increased to four years, and that all enlisted men of the Navy shall have all the privileges now granted by law to enlisted men of the Army and Marine Corps.
11. For a reorganization of the Marine Corps.

This measure, it is believed, meets the views of the great body of naval officers. Its essential fairness is recognized by all, and in the opinion of the Department its enactment will result in incalculable benefit to the service.

The amalgamation of the officers of the line and engineer corps is a natural evolution, and involves no radical departure in the education of officers. It removes causes of friction and jealousy; it makes officers

of the line capable of performing duty in the engine room as well as on deck, and officers of the engineer force capable of taking a turn of watch duty or fighting the ship should it become necessary.

The additional number of officers which it provides is less than was asked for by the Department in its last annual report, but this deficiency it is believed will be made up by the provision authorizing the appointment of warrant machinists.

The provision with regard to the Naval Academy course will result in the immediate commissioning of the two classes now at sea, and the shortening of the term to four years will make a constant and uniform increase of about 40 per cent in the number of graduates from that institution.

It is better if all officers who go into the service have the education of the Naval Academy. The volunteer officers appointed for the war with Spain have rendered valuable services, but it is necessary to consider the fact that they were not always capable of performing all the duties of the trained officer who, in addition to graduating from the Naval Academy, had the benefit of continued service and experience in the special line of naval work.

The naval officer of to-day must not alone have a knowledge of seamanship and navigation, but must be trained in the technicalities of electrical engineering, ordnance, the use of the torpedo, be grounded in higher mathematics, and familiar with the customs and practices of the service in its associations with foreign naval and diplomatic representatives. He must be a many-sided man, ready at the orders of the Department to take up any branch of duty and perform it intelligently. The officers who come into the service from civil life, while full of zeal and energy, necessarily lack the training and experience which qualify them to perform many of these duties. Congress, in the act authorizing appointments from civil life, limited such appointments to the period of the emergency created by the war with Spain.

The number of officers now allowed by law is 921. Under the personnel-bill law the number will be 1,020. A comparison of the figures as provided by the new bill with the number at present allowed is shown in the following table:

<i>New line of the Navy.</i>		<i>Present line and Engineer Corps.</i>	
Flag rank (rear-admiral)	18	Rear-admirals	6
Captains	70	Commodores	10
Commanders	112	Captains	45
Lieutenant-commanders	170	Commanders	85
Lieutenants (senior)	300	Lieutenant-commanders	74
Lieutenants (junior)		Lieutenants (senior)	250
Ensigns	350	Lieutenants (junior)	75
Total	1,020	Ensigns	181
		Chief engineers	70
		Past assistant engineers	66
		Assistant engineers	50
		Total	

In consequence of the increase in the number of officers and of the provision making the pay of the new line the same as that of the officers of the Marine Corps or the Infantry of the Army, the expense under the head of "Pay of the Navy" will be increased about \$600,000. It should be noted that \$230,000 of this sum is for the pay of the 99 additional officers authorized, and that the actual increase to the officers now in the service is only \$360,000. This is a small amount when distributed among 921 officers.

But why should this be considered, when it is remembered that the pay provided in the bill is only what the officers of the Army and the Marine Corps of like rank have been receiving for years? Are the services of the Navy less valuable to the country? The duties and responsibilities of the naval officer, it is submitted, are certainly equal to those of the other branches of the military service, and the demands upon him, by reason of his absence from home, and the necessity of returning while on shipboard the courtesies of which he is, as the representative of the United States, often a recipient, necessarily involve additional demands upon his private purse. By reason of ability, responsibility, and the value of the services performed, the naval officer is entitled to equal pay with his brother officer in other branches of the military service, and it is hoped that Congress will not longer deny it him.

The bill also provides for a regular flow of promotion from the lower to the higher grades, and in order to accomplish this in the event that the retirements for age do not create a sufficient number of vacancies, a board composed of officers of high rank will select for retirement, from among those officers whose records show them to be the least efficient, the officers necessary to create the requisite vacancies.

Section 8 of the bill provides for the voluntary retirement of officers in certain cases, and the resort to compulsory retirement is to be made only when the vacancies created by voluntary retirement and retirement for age are not sufficient. It is believed that this will result in material benefit to the service, not alone by reason of the promotions made, but also by weeding out of the service officers who are the least efficient.

The provision granting the privilege of retirement to enlisted men after thirty years' service is only granting them the privilege now enjoyed by the enlisted men in the Army and Marine Corps. It is a simple act of justice to these men, who, after rendering faithful service and incurring the dangers of military life, find themselves in their old age without any provision for their support in their declining years. The enlisted men in the Marine Corps, with whom they serve side by side, are allowed this privilege. It should no longer be denied to the enlisted men in the Navy.

The section which relates to the reorganization of the Marine Corps provides for an increase in the number of officers, and that the Com-

mandant of the Corps shall have the rank of Brigadier-General. During the war the Marine Corps numbered 116 officers and 4,700 men, and the peace strength of the Corps is over 3,000 men. This number should be increased as hereinbefore recommended. From 1867 to 1874 the rank of the Commandant was brigadier-general, and during this period the Corps was smaller than at the present time.

It is not deemed necessary to discuss this measure in great detail, as its provisions have been so fully and clearly set forth in the very able report submitted with the bill.

The Department desires, however, to emphasize the importance of its early consideration and enactment. The Navy has won a warm place in the hearts of our people; it is our strong arm of defense; it has the confidence of the country, and by its magnificent work has entitled itself to every consideration at the hands of Congress. This bill provides at once some measure of reward for past achievement and a promise of increased efficiency and greater usefulness in the future.

In this connection the Department suggests the propriety of legislation, such as formerly existed, whereby the way may be opened for men in the ranks to rise by merit to official grade. This might be done by authorizing the President to annually appoint, in accordance with section 1515 of the Revised Statutes, five naval cadets from the naval apprentices possessing the legal qualifications, who have been at least two years in the service, one year of which has been spent on board a naval vessel commissioned for sea service.

REWARDS OF OFFICERS.

The injustice of the present system of rewarding officers for conspicuous conduct in battle and extraordinary heroism is so apparent that the Department desires to set before Congress the facts in full and to recommend a change in the present law on this subject.

As a result of the recent war certain officers of the Navy who deserved reward, and who under existing law could have it in no other way, were promoted over the heads of their brother officers who, by reason of the necessity for their services on other duty not less important, had no chance to participate in the battles of Manila and Santiago. This worked a hardship in many cases and in some instances prevented officers who are of great desert from the chance of reaching the highest grade of the Navy.

The promotion of certain captains who participated in the battle of Santiago renders it practically certain that others will be retired as commodores, who, in the ordinary course of promotion, would otherwise have reached the grade of rear-admiral and been retired as such. This will make a difference in the retired pay of these officers of \$750 a year in each case, and is indeed a direct punishment to them. Whereas.

having performed arduous duties during the period of the war in a highly efficient manner, they are rather entitled to be rewarded.

This method of promotion has the effect in some cases of setting back officers who have previously been advanced. Captains advanced for good conduct at the battle of Manila have lost numbers by the promotion of other captains who participated in the later battle of Santiago. In the event of prolonged hostilities it is quite possible that an officer, rewarded in this manner, might not only lose all the benefits of his promotion, but even finally find himself lower on the list than at the beginning of the war.

This method of reward is not satisfactory, it is believed, to anyone. No duty, for instance, in time of war, is more important than that performed by the Bureau chiefs at the Department or by the officers at the navy-yards and stations if our fleets are to be maintained in an efficient condition. And yet these officers, who have borne great responsibilities and worked day and night, find themselves not rewarded but punished to the extent of relative reduction in numbers, and of delay in promotion, with the resulting loss of pay. To correct this, the Department recommends legislation to the end that some other system of reward for merit be adopted, so that in rewarding one officer injustice shall not be done to another; and also, that in those cases in which officers have during the present war been jumped, it shall be provided that this shall not operate to their disadvantage, and that they shall still have their regular promotion as before. Bills have been drawn for both these objects, and will be submitted to Congress.

REVIVAL OF THE GRADE OF ADMIRAL AND VICE-ADMIRAL.

Section 1362 of the Revised Statutes provides that—

The active list of the line officers of the Navy of the United States shall be divided into eleven grades as follows, namely: First, admiral; second, vice-admiral; third, rear-admiral; fourth, commodore, etc. * * *

This section of the Revised Statutes further provides:

That vacancies occurring in the grades of admiral and vice-admiral shall not be filled by promotion, or in any other manner; and that when the offices of said grades shall become vacant, the grade itself shall cease to exist.

These grades were created for the purpose of rewarding certain officers who rendered distinguished service during the civil war. The grade of admiral ceased to exist upon the death of Admiral David D. Porter, and the grade of vice-admiral ceased to exist on the death of Vice-Admiral Stephen C. Rowan.

It is the recommendation of the Department that the grades of admiral and vice-admiral be revived, temporarily as before, to be filled by such officers as it may be the pleasure of the President to nominate and, by and with the advice and consent of the Senate, to appoint.

ENLISTED MEN AND APPRENTICES.

The recommendation of the chief of the Bureau of Navigation is approved that Congress give authority to increase the enlisted force whenever necessary to 20,000 men and to enlist apprentices to the number of 2,500. While it would not be the intention of the Department to enlist this number of men until such time as the increase in the number of vessels shall make it necessary, it is nevertheless desirable that this authority be granted in order that the Department may keep in commission such of the auxiliary ships recently purchased as is deemed desirable and have sufficient men to man the new ships as they are completed.

The increase in the number of apprentices asked for will enable the Department to constantly add to the ships' crews a certain percentage of trained men.

The enlisted force of the Navy on the 15th day of August, when it reached its maximum, numbered 24,123 men and apprentices. On the 31st day of October the enlisted force had been reduced to 19,401, and has since been further decreased.

At the end of the fiscal year, June 30, 1898, there were 22,828 men and apprentices in the service, 65 per cent of whom were native-born, and 80 per cent citizens of the United States. Twenty-five per cent of the remaining have declared their intention of becoming citizens.

INCREASE OF THE NAVY.

The Navy should be increased; the development of its various branches should be homogeneous, and the increase in ships should be accompanied by a gradual increase in officers and men, and in naval stations, coaling stations, repair plants, etc.

The naval board on construction recommends the following increase:

1. Three seagoing sheathed and coppered battle ships of about 13,500 tons trial displacement, carrying the heaviest armor and most powerful ordnance for vessels of their class, and to have the highest practicable speed and great radius of action. Estimated cost, exclusive of armor and armament, \$3,600,000 each.

2. Three sheathed and coppered armored cruisers of about 12,000 tons trial displacement, carrying the heaviest armor and most powerful ordnance for vessels of their class, and to have the highest practicable speed and great radius of action. Estimated cost, exclusive of armor and armament, \$4,000,000 each.

3. Three sheathed and coppered protected cruisers of about 6,000 tons trial displacement; to have the highest practicable speed and great radius of action, and to carry the most powerful ordnance suitable for vessels of their class. Estimated cost, exclusive of armor and armament, \$2,150,000 each.

4. Six sheathed and coppered cruisers of about 2,500 tons trial displacement; to have the highest speed compatible with good cruising qualities, great radius of action, and to carry the most powerful ordnance suited to vessels of their class. Estimated cost, exclusive of armament, \$1,141,800 each.

With the territorial acquisitions of the present year, if the Philippines are also annexed to the United States, its outlying territorial possessions will be so great and so extended that this increase of naval force will be necessary; and, as two or three years will be required for the construction of the ships enumerated, appropriations sufficient for beginning them should be made now. Otherwise the authorization of the second of the above recommendations at the coming session of Congress would be enough.

CONCLUSION.

The Naval War Board, as finally constituted during active operations in the recent war, was composed of Rear-Admiral Montgomery Sicard, Capt. A. S. Crowninshield, and Capt. A. T. Mahan (retired), and was constantly in session at the Navy Department. It was equal to every demand and through it proper control was exercised by the Department over all movements in the field; at the same time all officers there were left ample discretion and were never hampered in their work. The board was charged with delicate and most important duties, and yet the Department is not aware of an error in its performance of them.

With such aid as that of this board in the direction of naval movements; with such most helpful, earnest, and adequate assistant secretaries as Theodore Roosevelt and his successor, Charles H. Allen; with such efficient and competent bureau officials charged with the maintenance, supply, and preparation of the Navy; with such officers in authority at naval stations, and with such officers and men afloat to carry on the campaign, the success of the naval department of the Government was assured.

It is to all these that the country is indebted for whatever good work and renown have been achieved by its Navy in the recent war. The head of the Department can only in a measure aid with a touch here and there. Untrained in the art of naval warfare, without professional knowledge of the technicalities of the service, he is at best only the director of its general progress. Throughout his service in the Department he is greatly indebted for whatever success his administration attains to the intelligence, professional ability, and loyalty of those who serve under him. Especially is he dependent upon the chiefs of bureaus, with whom he comes in direct contact and upon whom he must rely for advice and counsel. In the conduct of the recent war it has been necessary to refuse the earnest requests of these officers for duty with the fleet, where alone distinction and glory could be won.

Their services, however, are never more essential to the Department than at such a time, and with a full realization of the fact that many of them have been waiting a lifetime for the very opportunity which the war afforded, the Department felt the keenest regret that they should be denied the privilege of service at the front. The demands upon the officers on duty at the Department and the navy-yards and stations, alike with those afloat, are much greater in time of war; they are often on duty night and day; their responsibilities are vastly increased; and they, too, deserve reward for meritorious service.

The thanks of the Secretary are due to his private secretary, Mr. Lewis H. Finney, jr., who has collated the material for this report, and especially to the clerical force of the service, which has faithfully and efficiently met the greatly increased demands incident to the war.

JOHN D. LONG,
Secretary of the Navy.

R E P O R T
OF THE
ASSISTANT SECRETARY OF THE NAVY.

NAVY DEPARTMENT,
Washington, November 15, 1898.

SIR: In accordance with your recent suggestion, I have the honor to submit the following report of the work of this office during the past year.

It is proper to remark that I took charge of the office on May 11, 1898, as the successor to Hon. Theodore Roosevelt. As Mr. Roosevelt left the office to engage in active duty in the Army, it was impossible for him to leave any notes in regard to his views, and therefore for that part of the period covered by the report it is only possible to refer to the facts which occurred.

By the regulations of the Department the Assistant Secretary is charged with the general supervision of matters relating to the *matériel* of the Navy. This of course does not mean that this office carries out the details with regard to the ships. This work is ably performed by the Bureau chiefs, on whose professional skill and signal devotion to duty the Department may well congratulate itself. The work of this office is devoted to the final decisions in matters affecting several Bureaus, and, in general, to the expedition of all work affecting the *matériel* of the fleet.

The reports of the Bureau chiefs have set out so fully the vast amount of work which they have performed during the past year that it is unnecessary for me to go into the matter further than to say that my association with these officers has been extremely pleasant, and that I have always found them eager to assist in every effort for the promotion of the highest efficiency of the fleet.

THE AUXILIARY NAVY.

Inasmuch as the purchase of vessels from the merchant marine—yachts, etc.—was conducted by this office, it may be remarked that this work was managed with the utmost care as regards selection of vessels for their strength and adaptability to naval uses, as well as with respect to the price paid. The majority of these vessels were inspected by

a board of which Capt. Frederick Rodgers, U. S. N., was president, and I take pleasure in commending the intelligence and fidelity with which the work of this board was carried out. In other cases special boards of officers were appointed to conduct the inspection. What I wish to emphasize especially is the fact that no vessel was purchased until after it had been thoroughly inspected and had been pronounced thoroughly satisfactory by officers whose professional training made them experts.

Attention is called to the fact, which may not be generally known, that in the purchase of these vessels the same care for the Government's interests on the financial side was exercised as would be the case with a private individual or corporation, with the effort, in every case, to make the best bargain possible. In the full tabulated detailed statement which I have furnished for your report, of the number of auxiliary vessels purchased, comprising the original name, the price asked, the price recommended, and the price finally paid, numerous instances will be found where the cost to the Department was very much less than the original price asked, sometimes, indeed, less than the price at which the purchase was recommended by the board. When we began the purchase of these vessels there was scarcely any competition, and it is possible that prices were higher than could have been secured if it had been practicable to wait until competition brought lower figures. But it must be remembered that the law of supply and demand holds for the Government as well as for private individuals, and that true economy and the best interests of the Government made it the correct policy to pay a higher price for a vessel when her services were vitally needed rather than to suffer the Government's interests to be jeopardized by waiting for a lower price. Not very long after the purchasing began the competition to supply ships became very active, and the Department was then enabled to get vessels at very reasonable prices.

As an example of the generous patriotism of friends of the Government at the time of its need it is a pleasure to record the fact that two of the vessels added to the auxiliary fleet were the free and unconditional gift of the owners. The *Free Lance* early in the war was offered by Mr. F. Augustus Schermerhorn, accepted by the Department, put into commission at once, and gave excellent service throughout the war. The *Buccaneer* was generously given by Mr. W. R. Hearst, who also paid for the exterior alterations necessary to fit her for service. Both these vessels were restored to their owners as soon as practicable after the signing of the armistice.

All the correspondence relating to the purchase of these vessels and their price is on file in the Department and open to proper inspection at any time.

CHARTERED VESSELS.

The four fine vessels of the American Line were chartered from that company under an agreement which enabled the Government to take

them over with the same crews ordinarily employed in their regular service, so that it was only necessary to arm them and make a few other changes to fit them for duty as scouts. This duty they performed with great efficiency. After the destruction of Cervera's fleet off Santiago, when their services as scouts were no longer needed, they were employed as transports for the Army with great satisfaction to that arm of the military service. During the last few weeks of their charter the *Harvard* and *Yale* (the *Paris* and *New York*) were run entirely for the benefit of the Army and at its expense.

When it was desired to terminate the contract with the company a mutually satisfactory arrangement was made on the basis of the payment of a lump sum to the company as an equivalent for the expense of placing the ships in the condition in which they were when taken over by the Government. I have reason to believe that the Government saved a considerable amount by this arrangement, compared with what the cost would have been if the course had been followed of paying for the work of rehabilitating them.

AUXILIARY NAVAL FORCE.

The organization of the force for coast defense, together with the purchase of the auxiliary vessels for such service, was conducted by this office.

The joint resolution of Congress providing for such organization and enrollment was passed May 26, 1898, and was known as public resolution No. 34. It carried an appropriation of \$3,000,000. It may be interesting to state that of this amount but \$720,639.05 was spent. The organization was placed in charge of Commander Horace Elmer, U. S. N. Upon his death Rear-Admiral Henry Erben, U. S. N. (retired), succeeded as chief; subsequently it was placed under Capt. John R. Bartlett, U. S. N. (retired), who conducted its affairs with marked efficiency until the force was mustered out of the service. His report in detail follows in appendix, and is submitted as a part of this report.

DEWEY'S SWORD AND MEDALS.

On June 3, 1898, Congress passed a resolution appropriating \$10,000 for a sword of honor to Admiral Dewey and for medals of honor to all the officers and men of his fleet engaged in the battle of Manila Bay. Immediately upon the passage of this resolution you appointed a board to consider the same. This board was made up of the Assistant Secretary, Senator Henry Cabot Lodge, and Prof. Marshall Oliver, of Annapolis. This board was convened at once, and considered the subject of the resolution. Many designs were submitted for both the sword and the medals. After careful consideration the board selected the design for the sword of honor submitted by Tiffany & Co., of New York, and the sword is now being made in accordance with that design. The

commission for the medals of honor was given to Daniel Chester French, whose very artistic and attractive design commended itself especially to the board.

STATUE TO ADMIRAL PORTER.

Under the provisions of an act of Congress of May 4, 1898, a second board was convened to consider the matter of the erection of a statue to the late Admiral David D. Porter. This board consisted of the Assistant Secretary, Admiral Francis M. Ramsay (retired), and Prof. Marshal Oliver. Various meetings were held, but as there were no funds available, it was impossible to invite designs from sculptors. The board has already recommended to you that a bronze statue of Admiral Porter of heroic size should be erected, to be placed upon a granite pedestal, the latter being enriched with four medallions commemorating notable events in the life of Admiral Porter. The board also recommended Franklin Square as a suitable locality for the statue, utilizing the mound near the northeastern corner of the park. It is recommended that Congress be asked to appropriate \$50,000 to meet all the expenses incident to the design and erection of such a statue.

INSPECTION OF NAVY-YARDS.

Between October 2 and October 15, I made a visit of inspection to all the navy-yards on our eastern coast, from Norfolk, Va., to Portsmouth, N. H., inclusive, and as a result of my visits have prepared memoranda for presentation to you, looking to possible changes and improvements where they promise to increase efficiency. The following brief summary gives the more important of the items to which attention should be given in the near future:

NORFOLK YARD.

There are no modern automatic appliances for extinguishing fire in the buildings of this yard.

The commandant strongly recommends the alteration of the timber basin into a deep basin for shipping. If this change were made there would be an addition of 1,800 feet to the water front of the yard.

Changes are recommended in the shops of the steam engineering and the construction departments to enable the plants to be enlarged to meet existing needs and to allow better arrangements.

Much of the woodwork of the wooden dry dock is thoroughly rotten and needs extensive repairs. This dock is only nine years old, and is an illustration of the inadvisability of building wooden docks. The stone dry dock near by is over sixty years old and is in perfect condition.

LEAGUE ISLAND.

This yard is admirably adapted to the care and preservation of vessels in reserve, and piers are now in process of erection for giving ready access to such vessels.

As a rule the buildings in this yard are poor and unworthy of a great department of the Government. If the yard is to be used at all, suitable buildings of a permanent character should be erected.

NEW YORK.

Matters at this yard are generally in an efficient condition. The heads of departments have made in their annual reports recommendations for improvement of plant and necessary alterations and improvements in buildings.

Automatic fire-extinguishing apparatus should be fitted in the various buildings of this yard.

The property belonging to the Government at the western end of the yard is cut off by a public street of Brooklyn, which can not be closed except by act of the legislature. This detached portion should be joined as soon as possible to the rest of the yard, as at present it is not easily policed and is a resort for river thieves and other objectionable characters.

The No. 2 wooden dock is rotting away like the one at Norfolk, thus giving a second example of the unsuitableness of this material for structures which should be absolutely permanent.

NEW LONDON.

This small station is well located, and is fairly well adapted both for use as a coaling station and as a base for torpedo boats and small vessels. It should not, therefore, be abandoned. There has been no work at this station for years, and the Department recently, and very wisely, dissolved the skeleton organization which had previously existed, and simply left the yard in the care of watchmen. If the Boston and the New York navy-yards are to be maintained in an efficient condition, there would seem to be no necessity for the fitting out of this as a large repair yard.

TORPEDO STATION.

Here, as at New York and Norfolk, there was great pressure of work during the recent war, and any defects which appeared were rectified, so that matters are now in a generally efficient condition.

One need is a suitable building for the storage of automobile torpedoes. At present there is not sufficient room, and this has necessitated their storage in various localities which are not altogether suitable.

TRAINING STATION.

The authorities here recommend that the accommodations for apprentices be increased so as to provide for 2,000 boys. Estimates have been submitted for the new building, but not for a building of sufficient size to accommodate this number. Before any building is completed the plans should be so arranged as to permit of expansion when the need arises.

The commanding officer recommends the building of two 300-ton brigs, similar to those used in the British navy, for training apprentices. If the training of the apprentices is to be chiefly in marline-spike seamanship, this recommendation seems entirely appropriate and to carry it out would not be expensive.

BOSTON.

This yard has been practically closed as a general repair yard for many years, and in consequence the equipment of the shops has become, in some respects, disorganized. Worse yet, some of the shops themselves are in very poor repair. The buildings generally are the best at any of our navy-yards, and if the reorganization of the working force is taken in hand by energetic officers this yard can be speedily brought up to a foremost position. One of the most important items for the efficiency of any plant employing large numbers of skilled mechanics is its proximity to a region where skilled labor in large quantity can be readily obtained. The Boston Navy-Yard has this advantage to a greater extent, perhaps, than any other.

The Department has already arranged for improvements in this yard consisting of a new dry dock and a traveling crane running along the water front. This will add materially to the resources of the yard.

The bulk of the rope supplied to the Navy has for years been manufactured at this yard, but the plant has become somewhat antiquated in certain respects. The proper officers who are charged with this matter have already taken steps to bring the efficiency of the plant up to modern requirements.

PORTSMOUTH, N. H.

The nearness of this yard to Boston, and the fact that it has not the same facilities with respect to the labor market, make it doubtful whether it is advisable to attempt to put this yard on a footing for doing large repair work.

Some of the buildings in this yard are of very substantial construction, while others have fallen into very bad repair.

A modern plant has been installed by the construction department for steel shipbuilding, and the constructor believes that if some work were given to this yard the organization would soon become very efficient.

There are advantages connected with the location that make it desirable that the yard should be put in efficient condition as a repair station of the second class for use in time of war.

GENERAL CONCLUSIONS.

As a result of my visit to the navy-yards certain points have been strongly impressed upon me which I think might be considered by the Department with the view to their adoption.

One is a system for the audit of accounts. All the accounts of the

different departments should be kept on a uniform system, and there should be an arrangement for having them audited at the yards themselves at irregular intervals by a competent accountant. Facts have developed in connection with the navy-yards to show that if such a system were in vogue the interests both of the Department and of the officers and employees would be much better guarded.

It has also occurred to me that the question might be considered whether in certain cases economy and efficiency would not be increased by the consolidation of certain shops doing very similar work, but under different departments. There may be good reasons why each of the several departments, for example, should have a blacksmith shop, but they are not apparent to a layman, and as the expense of superintendence and similar items would certainly be reduced, the matter is at least worthy of investigation and consideration.

WAR COLLEGE.

This institution has rendered valuable service in stimulating our officers of higher rank to professional advancement, and in the collection and arrangement of professional information so as to render it of the highest value to our officers. I believe that the institution should be encouraged by the Department, and everything done to render it still more efficient and useful.

To this end, it seems to me that the most important step is the transfer of the college from its present location at Newport to Annapolis, where it will form a post-graduate course for the Naval Academy; not in the sense that the midshipmen, after completing their four years' course, will at once take up the studies of the War College, but that, as at present, officers of considerable experience who are prepared to assimilate with advantage the course of instruction provided may have opportunity for such study.

Annapolis offers many advantages over Newport as the location. In the first place, it will bring our naval educational institutions into line with what the experience of our great universities has shown to be the best plan. In none of them has the idea ever been entertained that the advanced courses should be located in a place entirely apart from the undergraduate work.

Second. The Naval Academy is already thoroughly organized, and with the traditions of a great educational institution offers a basis on which a great naval university can readily be created.

Third. The War College needs, as well as the Naval Academy, a well-equipped library, laboratories, a full corps of instructors, and all the other elements of a complete educational institution. The Naval Academy already has these, and if the War College is located at Annapolis it will have the use of the existing facilities of the Naval Academy, together with those which it will bring with it when it is removed from Newport.

Fourth. Many of the professors and instructors at the Naval Academy can be utilized in the course of instruction in the War College, and if the objection be made that any of them are not competent for this work, the obvious answer is that the matter is entirely in the Department's hands, and that it is a simple matter to secure competent men.

Fifth. The central location of Annapolis, and the ease with which it can be reached from points where large numbers of naval officers are on duty, make it specially desirable as the seat of the War College. The officers at the Naval Academy and those on duty in Washington would undoubtedly avail themselves of the course of lectures when they could so readily attend them; and there would be the further great advantage that, when it would only require a single day for the purpose, Senators and Members of Congress could afford to spend the time to attend certain lectures which would be helpful in their work, so far as it concerns the Navy.

Sixth. The climate of Annapolis also offers special advantages, as tactical exercises can be carried out at all seasons of the year, and the Naval Academy is already provided with the outfit necessary for these exercises which are given to the midshipmen to familiarize them with the practical details. These would at the same time furnish the officers of the War College lessons in the more advanced studies connected with these subjects.

I have given the subject of the removal of the War College a great deal of careful thought, and have conferred with a number of officers who have the best interests of the service at heart, and these officers have assured me that in their judgment this plan is the best for enabling the college to do its finest work.

SPANISH WRECKS.

I think it was the day following the battle of July 3, when the reports had come to the Department of the condition of the wrecks of the ships of Cervera's fleet, that you suggested the prudence of attempting to save such of them as seemed worth the effort.

Negotiations were at once opened by telegraph with the Merritt & Chapman Wrecking Company. Representatives of that concern came to Washington, and were met at this office, where the subject of the inquiry was fully talked over, and an agreement entered into between the Department and the company, by which the latter was to proceed at once to the scene of operations with a full and suitable outfit, to commence operations at once, and to continue them diligently until a successful result was reached, or until the contracts were terminated by the order of the Department.

The company was to receive a per diem compensation, based upon an agreed price per man and apparatus employed. In the event of successfully raising any of the ships, an additional sum was to be paid the company when they had delivered such ship either at the Norfolk Navy-

Yard or such other northern port as the Department should designate, this additional sum to be agreed upon by arbitration. The possible services of the U. S. S. *Vulcan* as a repair ship were recognized, and provision was made for her use in that capacity. In the event of successfully bringing the *Cristobal Colon* into port—as this was properly regarded as the best of the sunken Spanish vessels—the limit to be paid under the terms of arbitration was not to exceed \$500,000, which sum was to include all the per diem charges incurred.

The wrecking outfit started from Norfolk, where it had been gathered, and without particular incident reached the scene of the wrecks. The *Colon* was first visited, but when the wreckers had carefully investigated the conditions surrounding this vessel they were convinced that, with the apparatus they had or could possibly obtain, raising her was utterly out of the question. Admiral Sampson appointed a board to report upon the general conditions of the wrecks, and that board, after a full and careful examination, concluded that the *Oquendo* was a hopeless wreck, so destroyed by fire as to be completely worthless. The *Vizcaya* they discovered broken in two, so as to be structurally worthless, with the forward compartments blown outward from the explosion of her own magazines. The *Maria Teresa* was burned to the protective deck and the superstructure ruined, but her machinery and boilers and all under the protective deck were in comparatively good condition. The *Mercedes*, sunk in still water, uninjured by fire, presented a simple wrecking problem.

The *Colon*, the finest ship of all, was on the shore and apparently uninjured by shot or fire. She was on her beam ends, stern to the shore, submerged for about two-thirds her length; resting on coral sand for about one-third of her length, the remainder overhanging in 60 to 70 feet of water. Being upon her beam ends the beams of her protective deck acted as stanchions and prevented her from straining, and she seemed to be structurally sound. Owing to her exposed position, however, and to the fact that the heavy sea rushing through her hatchways came surging out of her ports and openings with such volume and force, it was absolutely impossible for divers to get into the vessel, and dangerous for them to attempt to approach within 12 or 15 feet of her sides, so that a careful examination could not be made. It was thought, however, inasmuch as the ship was put into a sinking condition by her crew after she had surrendered, that her engineer force had probably smashed the sea valves with sledges, so they could not be easily repaired, and had shut up the water-tight bulkheads upon one side only in the hope that she would capsize in sinking, and that this accounted for her being on her beam ends.

When the wrecking company appeared upon the spot they at once, according to their orders, proceeded to the examination of the *Colon*. From the nature of their contract, which provided for a large sum of money in case they were successful in raising the vessel, it would seem

that every interest would urge the most diligent effort on their part to save that vessel. As a result of their examination, however, they reported without qualification that it was in their judgment a waste of money and of time to spend either in an effort to raise the *Colon*. They then proceeded at once to the *Maria Teresa*, as presenting a wrecking problem which promised satisfactory results. In the meantime Constructor Hobson appeared at the Department with a report upon these vessels submitted by Admiral Sampson. Mr. Hobson was very enthusiastic over the question of raising the *Colon*, which he claimed to be an engineering problem rather than a question for wreckers, and after listening to his plan, which seemed to have a quasi indorsement of the admiral, Mr. Hobson was allowed to enter into negotiations for the purchase of air bags and pontoons with which to carry out his idea of wrecking this vessel. Considerable delay was occasioned, and it became necessary for this officer to leave for Santiago before any of the air bags were completed or shipped.

In the meantime the progress of the wreckers had not been entirely satisfactory to the Department so far as results showed, and the entire wrecking operations were placed under the immediate charge of Commodore Watson, then in command of that station. Through him regular weekly reports were made as to the progress of the work. The wreckers succeeded in removing a good many articles of more or less value from the wrecks, but discovered unusual and unexpected difficulties in the case of the *Teresa*. This vessel, after some difficulty, was pumped out dry, and an attempt was made to pull her off the rock on which she was resting. It then appeared that this rock was of pinnacle shape, and had penetrated through the lower bottom, and the attempt to pull the vessel off made the rent larger, and she immediately filled and settled down again.

From that time, by direction of the Department, wrecking operations were centered on this vessel. Cofferdams were built inside; the hull divided into water-tight compartments. These were pumped out, and after a good deal of hard work the vessel was hauled off the rock upon which she rested and towed into Guantanamo Harbor. There she was put into such order and fitted for sea with such appliances as the U. S. S. *Vulcan*, at hand, happened to have, and started north on her voyage under the control of the wrecking company, as by the contract with this company it was to deliver her at the Norfolk Navy-Yard. On November 1, while being convoyed by the *Vulcan*, the *Leonidas*, and the wrecking tug *Merritt*, she encountered heavy weather off the Island of San Salvador. After a very exciting experience the crew abandoned the *Teresa*, and she "disappeared in the darkness."

It was supposed by those who had left the vessel that she had sunk in deep water. The crew was safely taken from the *Teresa*, put aboard the *Vulcan*, and brought into Norfolk. A few days later—on November 7—word came to the Department that one of the Ward Line

steamers had sighted a large vessel, which was thought to be the *Teresa*, ashore on Cat Island, a sand spit about 150 miles to the westward of San Salvador Island. As the wind was northeast at the time the *Teresa* was abandoned, her natural drift would have taken her toward Cat Island.

Accordingly, the Department directed the *Potomac*, a strong sea-going tug, then at Santiago, to be sent at once in search of the *Teresa*, and at the same time directed Captain McCalla, the captain of the yard at Norfolk, to take command of the U. S. S. *Vulcan*, then at Norfolk, and to start at once, with such wrecking and other appliances as he had at hand, to the place where the *Teresa* had been reported. At the time of submitting this report both vessels were on their way to the destination. When the *Teresa* started North under the charge of the wrecking companies, it was decided to terminate all the contracts then in force with respect to the vessels still off Santiago under the provision in the contracts providing for such action. Accordingly, the commanding officer at Santiago was so directed, and the company in New York notified of the action of the Department.

NATIONAL NAVAL RESERVE.

Our experience in the Spanish war has really been the only opportunity we have had with the system of an auxiliary naval force organized as a naval militia, and while such organizations responded with eagerness and showed the greatest patriotism and earnest desire to render service to the Government, it was found that the existing system had elements of weakness, which, under severe stress and against a powerful enemy, would have caused great anxiety; that for the actual needs of war ships and such auxiliaries as were required for deep-sea work there was needed a reserve which could be promptly mobilized under the call of the President, and which would be so enrolled that such call could be at once sent out to the individuals making up such a reserve through the Department.

Thus the attention of all has been turned to a national naval reserve—a body of seafaring men, of the sea habit, whose occupation and daily training make them more or less familiar with sea work, whose status should be that of a body of men directly under the control of the Federal Government. To this end such a force must necessarily be maintained absolutely out of the Federal appropriations, and no other appropriation could be considered, as complications of that sort would lead to friction, which could only impair the efficiency of the force as well as tend to a divided authority.

The Bureau of Navigation will ask authority to enlist up to 20,000 men, which will be a sufficient number for the present vessels of all classes.

There are, however, in process of construction and under repair, but not in commission:

	Men.
8 battle ships, requiring each 400 men.....	3, 200
4 monitors, requiring each 176 men	704
16 torpedo destroyers, requiring each 60 men	960
22 torpedo boats, requiring each 20 men.....	440
<i>Albany</i>	250
<i>Chesapeake</i>	50
<i>Chicago</i>	350
<i>Atlanta</i>	250
<i>Hartford</i>	200
<i>Forktown</i>	160
<i>Ferocious</i>	75
	<hr/>
	6, 639
11 vessels now in reserve, with one-third of crew of 150 men on board.....	1, 100
	<hr/>
Total	7, 739

Thus about 8,000 men in addition would be required should any exigency arise requiring the complete manning of these ships. But it will be several years before all the battle ships are completed, so that it would be fair to say that at the present time provision should be made for one-half the number, or 4,000 men.

These 4,000 Naval Reserve men could be enrolled in this way: It is expected that at least 1,500 will be enrolled from men who saw service during the Spanish war as members of the Naval Militia (4,216 Naval Militia men were enlisted in the regular service). The 2,500 additional men required for the first year, it is expected, will be enrolled from the seafaring class—yachtsmen, merchant marine, fishermen, and others—to many of whom the amount of pay during service, the transportation to and from their practice stations, and the uniforms furnished will be a sufficient inducement. Indeed, from letters and communications on file in this office it is believed that a very much larger number than required for the present needs of the service will be enrolled in such Naval Reserve the first three months.

The cost of such service to the Government may be approximated thus:

4,000 men, 2 suits of uniform, at \$11	\$44, 000
4,000 men, transportation to and from their homes to practice ship, \$5.....	20, 000
4,000 men, wages, officers and men, for two weeks, \$20	80, 000
	<hr/>
Total	144, 000

This will leave \$56,000 balance from an appropriation of \$200,000, allowing opportunities for supplying books and necessary equipments, and providing for a further period of drill, if in the judgment of the Department it seems expedient.

Bearing upon this particular subject, I have had the honor of handing you the draft of a bill embodying the views of many officers of large experience, as well as the opinion of this office as to the organi-

zation of a National Naval Reserve for your consideration, and for transmission to Congress, if it meets with your approval.

Coming to this office without technical experience in the work required, and at a time of great activity in the Department, it would have been almost an impossibility to carry on the duties with any measure of success without the generous assistance which was freely accorded by every officer with whom I came in contact, and whatever measure of credit is due the office must be shared by the bureaus, whose kindly cooperation and loyal assistance made a pleasant duty of what, without such help, would have been difficult in the extreme.

Very respectfully,

CHAS. H. ALLEN,
Assistant Secretary.

The SECRETARY OF THE NAVY.

REPORT OF THE CHIEF OF THE U. S. AUXILIARY NAVAL FORCE.

NAVY DEPARTMENT,
HEADQUARTERS U. S. AUXILIARY NAVAL FORCE,
Washington, October 11, 1898.

SIR: I have the honor to submit the following report concerning the United States Auxiliary Naval Force, which was organized for service in the war with Spain under the terms of a joint resolution of Congress passed to meet the emergency in the month of May last. As a consideration of this joint resolution is necessary to a complete understanding of the organization and limitations of the Auxiliary Naval Force, I set it forth in full, as follows:

JOINT RESOLUTION providing for the organization and enrollment of the United States Auxiliary Naval Force.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That a United States Auxiliary Naval Force is hereby authorized to be established, to be enrolled in such numbers as the President may deem necessary, not exceeding three thousand enlisted men, for the exigencies of the present war with Spain, and to serve for a period of one year, or less, and shall be disbanded by the President at the conclusion of the war.

SEC. 2. That the chief of the United States Auxiliary Naval Force shall be detailed by the Secretary of the Navy from the active or retired list of the line officers of the Navy not below the grade of captain, who shall receive the highest pay of his grade while so employed.

SEC. 3. That enlistment into the United States Auxiliary Naval Force shall be made by such officer or officers as the Navy Department may detail for the purpose, who shall also select from merchant vessels and other available sources such volunteers as may be deemed best fitted for service as officers in said force, and shall report to the Secretary of the Navy, for his action, their names and the grade for which each is recommended.

SEC. 4. That for the purposes of this organization the coast line shall be divided into districts, each of which shall be in charge of an assistant to the chief of the

United States Auxiliary Naval Force; and such assistant chiefs may be detailed by the Secretary of the Navy from the officers of the active or retired list of the line of the Navy, or appointed by him from civil life, not above the rank of lieutenant-commander.

SEC. 5. That the officers and men comprising the United States Auxiliary Naval Force shall receive the same pay and emoluments as those holding similar rank or rate in the Regular Navy; and all matters relating to the organization, discipline, and government of men in said force shall conform to the laws and regulations governing the United States Navy.

SEC. 6. That the chief of the United States Auxiliary Naval Force or such officers as the Navy Department may detail for such service, may, with the consent of the Governor of any State, muster into the said Force the whole or any part of the organizations of the Naval Militia of any State to serve in said Auxiliary Naval Force, and shall report to the Secretary of the Navy, for his action, the names and grades for which commissions in said United States Auxiliary Naval Force shall be issued to the officers of such Naval Militia, and shall have the power to appoint and disrate the petty officers thereof.

SEC. 7. That the officers, warrant officers, petty officers, and enlisted men and boys of the United States Auxiliary Naval Force thus created shall be paid from the appropriation "Pay of the Navy;" and the sum of three million dollars, or so much thereof as may be required, is hereby appropriated, from any money in the Treasury not otherwise appropriated, for the purchase or hire of vessels necessary for the purposes of this resolution."

(Approved May 26, 1898, and known as public resolution No. 34.)

At the time the resolution received the signature of the President part of the organization which it authorized, and some of the results which it was designed to accomplish, had already been effected under a different name. This occurred because the resolution which had been introduced in Congress early in the month of April had been set aside in favor of legislation of wider scope, and in the meantime (in anticipation of its passage) preparations for naval defense and offense had to be rushed forward under authority of existing laws. As a result, when the joint resolution became a law its provisions had to be applied to existing conditions; and various elements, which had up to that time been developed separately, had to be concentrated under one management.

On March 23, 1898, the Department had directed Commander Horace Elmer, U. S. N., to prepare, with all possible dispatch, a scheme utilizing the available resources of our Atlantic coast in the formation of a "mosquito flotilla," in general accordance with the methods proposed by the Naval War College. He was directed to suggest for each important locality the names of suitable vessels (in such numbers as he might think proper) to be outfitted as improvised gun vessels, rams, or torpedo boats; to indicate how and where the armament of these vessels should be obtained and mounted; how their captains and crews might be secured from the merchant service or Naval Militia; to propose appointments for volunteer officers and ratings for enlisted men, and to prepare an organization for the whole coast and rules for the government of each local division. Commander Elmer was told that "promptness, efficiency, and economy" were necessary, and that this scheme must be

so perfected that it could be put into instant execution on the issuing of orders from the Department. A copy of the letter of the Department is annexed hereto. (Appendix A.)

Commander Elmer was immediately detached from duty at Philadelphia and ordered to proceed to New York, where he established headquarters at the navy-yard, and undertook with great zeal the work outlined for him, which soon proved to have an enormous amount of detail. The consideration of the needs of the different ports, the vessels available for the various kinds of service proposed, and the selection of suitable officers and men rendered his task complex and arduous. He was assisted in various features of it, however, by the officers of the New York Navy-Yard and New York Naval Militia, and by the board on auxiliary vessels, and had at his command such clerical force as could be spared from the pressing work of the yard.

During the first week of April the joint resolution was prepared by the Department to fully carry out the purposes intended, and Commander Elmer was directed to arrange the different districts in connection with what was then called the "Coast Defense System," or "Mosquito Flotilla," so that each district should conform to the corresponding districts as subdivided by the Light-House Board of the Treasury Department. This was done with the idea of simplifying the organization and expediting its completion, as the naval officers detailed as inspectors of the various light-house districts were familiar with the localities in which they were stationed and generally acquainted with the personnel and material of the districts. A copy of the Department's letter is hereto annexed. (Appendix B.) The light-house inspectors were not relieved of their regular duties, but were ordered to assume in addition to them the duties connected with the coast-defense districts.

On April 19, 1898, the Department informed Commander Elmer that he could not move actively in the matters with which he was charged until war was declared and the President should call out the Naval Militia. In the meantime he was directed to use all possible dispatch to perfect his scheme, so that each of the vessels which he proposed to assign to defense should be selected and her armament allotted upon his request by the Chief of the Bureau of Ordnance and held in readiness for his orders. He was told to prepare contracts for the work to be done upon the vessels in local establishments and to see that the officers of the Naval Militia who were to command these vessels were nominated by the local chiefs of the Naval Militia, and that the crews, also from the Naval Militia, should be set apart by name for each particular ship. A copy of this letter is hereto annexed. (Appendix C.)

Of course, but a part of the many details of this plan had been worked out when war was declared on April 25. Just at this critical time, and while his experience, intelligence, and untiring energy were of the greatest importance to the public service, Commander Elmer died, after

a very short illness, leaving the work which he had begun so admirably to be carried on by another. At the time of his death the plans of the Department had been elaborated so as to include the defense of fifteen harbors and strategic points on the Atlantic and Gulf coasts, with a flotilla of 28 gun vessels, 12 torpedo vessels (one tube each), and 40 patrol boats, and the armament of these vessels had been worked out with such ordnance as was available. All of these vessels were to be employed in the inshore or coast-patrol fleet, it having been determined to organize a deep-sea or offshore patrol fleet as a distinct naval command. The light-house inspectors of all the districts but three had reported for duty in connection with coast-defense work, and correspondence had been opened all along the coast with the local naval militia and other sources to obtain data in regard to vessels suitable for the different classes necessary for the formation of the "Mosquito Flotilla."

Prior to this time the Department had taken up actively, with the State authorities, the employment of the Naval Militia, but it was apparent that there was no authority of law for mustering Naval Militia organizations into the service of the United States, and that the President was not authorized to call them out for service outside of the United States, and the passage of the joint resolution became of prime necessity. In the absence of a national naval reserve the Department had relied upon the State Naval Militias to supply the personnel for coast signal work and for manning the vessels of the coast-defense system. It was for these purposes only that the Naval Militias had been drilled and instructed under orders from the Department. The scope of their duties is well defined in the "Memorandum for boards appointed to report upon the condition and efficiency for service of the Naval Militia," in 1897, which says:

They are not to be considered in any sense as a naval reserve capable of manning our seagoing fleet, although their cooperation would be very valuable in examining into the seafaring personnel of their respective districts, in keeping constantly informed as to this source of supply for the Navy, and in suggesting possibilities in the way of grouping and registering these men, which would make them available in the case of sudden need. A true naval reserve would have to be established under national auspices alone. The dual character of the Naval Militia, owing as it does allegiance to the State maintaining it and the General Government, must place a limitation on the expectations that the latter has concerning it. (Annual Report of the Operations of the Naval Militia for 1897, p. 9.)

The last annual report of the Secretary of the Navy also called attention to the fact that the Naval Militia offered the only means of procuring what was in any way a substitute for an efficient naval reserve to consist of seafaring men, under direct control of the national authorities, and noted that there were particular and important functions which belonged to the Naval Militia alone, and that there were three or four of these organizations which in the event of a sudden emergency could be utilized at once for manning some of the smaller naval

vessels. It mentioned the placing of mines and the establishment of signal stations for coast defense as two of the most important features of their work, all of which was to be performed in the "second line of defense." (Annual Report of the Secretary of the Navy, 1897, p. 31.)

Organizations of Naval Militia existed in January, 1898, in fifteen States, aggregating 3,703 petty officers and enlisted men, and about 200 commissioned officers. Just prior to the war, organizations were officially recognized in two additional States, and provisional organizations were formed in two others. Without waiting for special legislation, the Department called upon the State Naval Militias, in the latter part of March, to furnish officers and crews for the single-turret monitors (which had seen service in the war of the rebellion and were then laid up at League Island Navy-Yard), and had arranged with the governors of the various States that either leaves of absence or discharges should be granted to such officers and men as should volunteer for this duty. The responses were prompt and satisfactory, and showed the patriotic spirit of the Naval Militia, eight monitors being rapidly put in commission, each under command of a naval officer, all the other officers and the entire crews being furnished by the Naval Militias of the various States.

The Department also called upon the States of New York, Massachusetts, Michigan, and Maryland to furnish officers and men for the merchant steamers purchased for the war, and renamed the *Yankee*, *Prairie*, *Yosemite*, and *Dixie*. This was in accordance with the suggestion that some of the older organizations of Naval Militia were competent to furnish officers and men for seagoing vessels. This call was one which taxed to the utmost the resources of the Naval Militia organizations, coming closely as it did upon that for volunteers to man the monitors, but it was responded to with most gratifying alacrity. To fill the complement of these vessels, each organization called upon contributed about 250 men.

As examples of the promptness with which the call was met, the contingent from the First Naval Battalion, New York, reported uniformed, armed, equipped, and ready for duty in six hours after receiving notice; and the contingent from the Massachusetts Naval Brigade, which was notified at 1 o'clock on a Saturday afternoon, arrived at the New York Navy-Yard, fully prepared for service on the *Prairie*, at 9 o'clock the next morning. For the first time in the history of the Navy, professional men, business men, and men of leisure and of the highest education were brought into the lower ratings, and from the reports which have come incidentally to my notice, it appears that they served with great intelligence and enthusiasm, and after a short experience made good men-of-war-men, although they had had little or no training as seagoing sailors, and exhibited some of the lack of knowledge of the care of property and themselves that is common to all volunteers.

The naval militia of the seaboard States had also been taxed to fur-

nish officers and men for the coast signal service. They had been trained to expect such duty, and the admirable manner in which they performed it has been commented upon by me in another report previously submitted. Active recruiting to fill the vacancies caused by these drafts was in progress in the Naval Militia organizations at the time of the declaration of war and of Commander Elmer's death, and their officers were busily at work preparing to fill the places in the scheme of coast defense for which they had been instructed as soon as the formation of the auxiliary naval force should be authorized by law.

This was the situation when, on April 25, 1898 (the date that Congress declared that a state of war had existed since April 21), orders were issued to Rear-Admiral Henry Erben, U. S. N., retired, to report immediately to the commandant, navy-yard, New York, "for duty as officer in charge of the torpedo-boat flotilla work in connection with the coast-defense system," as the successor of Commander Elmer.

The work of the most pressing importance (war having been declared) was the acquisition of suitable vessels to add to the monitors, the stations for which had been determined, and which had been assigned for duty in the coast-defense fleet. Money for the purchase of some of the necessary steamers, tugboats, and yachts was available from the appropriation for "National defense," and competent engineers and naval constructors were at once detailed to headquarters, and boards for the inspection of vessels, composed of officers of the necessary professional requirements, were organized in districts where there was the largest number to be inspected. Nothing, however, could be done with regard to the personnel until the passage of the joint resolution, which was still unavoidably held back in Congress by the pressure of legislation connected with the war. Admiral Erben was made fully acquainted with the intentions of the Department and with the situation, in a letter dated April 28, a copy of which is hereto annexed. (Appendix D.)

Meanwhile submarine mines were placed by the War Department in the harbors of the more important seaports and shipping thereby greatly interfered with, and the Navy Department was called upon to patrol and protect the mine fields. This duty was relegated to Admiral Erben's command, and instructions were given him relative thereto, under the dates of May 6 and May 17, copies of which are annexed (Appendix E and Appendix F). At this time, however, but few of the vessels purchased under the recommendations of the board on auxiliary vessels had been prepared for patrol duty, and it was impossible to obtain a sufficient number of boats to perform this service. In New York the governor of the State hired suitable tugs, fitted them out, manned them with officers and men from the Naval Militia, and put them at the service of the Department, and by this means the mine fields at the entrance to the port of New York were

thoroughly patrolled for ten days, the Naval Militia acquitting themselves most creditably in this duty.

The governor of New York also placed at the disposal of the Department, on April 27, the services of his Naval Militia aid, who was of material assistance in securing the passage of the joint resolution authorizing the organization and enrollment of the Auxiliary Naval Force.

On May 26 the President signed the joint resolution, and Admiral Erben became the chief of the United States Auxiliary Naval Force. From the foregoing résumé it is possible to understand the conditions existing at the time that the resolution became a law. The exigencies of the war upon which the resolution was predicated (in section 1 thereof) existed. An officer of the Navy, not below the grade of captain, already had charge of the organization contemplated by the joint resolution, as was provided in section 2 thereof. The coast line had been divided into districts, each one of which was in command of an officer of the Navy, assisting the chief, and it but remained to complete the alterations and repairs to the newly purchased vessels (upon which men were working night and day at the various navy-yards) to get them on their stations and to examine and enlist the men from the naval militias and examine their officers for recommendation and appointment.

Prior to this date, and in the emergency, the officers who had been commissioned for temporary duty on the monitors and auxiliary cruisers and in the Coast Signal Service had been accepted without examinations, the only exception being the officers of the U. S. S. *Yankee*. The Department, however, determined (as the joint resolution did not restrict the purpose for which the officers should be used, but authorized their employment for general service) that no further appointments should be made except upon the recommendation of examining boards, which were thereupon appointed and convened. The chief of the United States Auxiliary Naval Force and the governors of the States having naval militias were notified by the Department that there was opportunity for a more general employment of the naval forces of the States, and it was suggested that the various adjutants-general should be instructed to rendezvous their Naval Militia for examination and enlistment of such as might be found qualified.

Officers and men were informed that the intention was that their services would be used as far as practicable for necessary coast defense (the duty for which they had been instructed and drilled), but that as they were, when mustered in, to receive the same rank and pay as those of the Regular Navy, they should be prepared, in case of special emergency, to serve wherever the Department deemed their presence most necessary. Those passing examinations, physically and professionally, were recommended for appointment to the grades or enlisted for the ratings for which they were found qualified, and when

mustered into the service were sent to the nearest receiving ship or station, from which regular details were drawn as required. These details, as far as practicable, were made up of men from the same State and organization. A copy of the circular of "Instructions for the enlistment of the Auxiliary Naval Force," which was sent to the adjutants-general of the various States interested, is annexed (Appendix G).

I also append an examination paper upon which a candidate for the position of a lieutenant was examined. This was selected at random, and is an evidence of the thoroughness of the examinations. (Appendix H.) Officers were rapidly examined, recommended for appointment, and commissioned, the form of commission given them being annexed. (Appendix I.) No special form of enlistment paper for the men was used, but on the first and second sheets of the ordinary enlistment records the words "Auxiliary Naval Force" were written. The limit of the term of enlistment was entered in each instance as one year, and the sentence was added, "Discharge will be granted upon request, provided the exigencies of the service will permit."

Vessels were rapidly purchased under the \$3,000,000 appropriation carried by the joint resolution, and were sent to the nearest navy-yards to be altered for the purposes for which they were intended. The vessels purchased under this appropriation included ten yachts and five tugs, the cost aggregating \$593,500. I annex a list of these vessels, giving their names at the time of purchase, their names in the service, and the date when purchased. (Appendix J.) From the number of vessels attached to the Auxiliary Naval Force, and which were manned by men from the Naval Militia, those which were deemed best suited for service in southern waters were detached on June 30, namely, the *Governor Russell*, *East Boston*, *Apache*, *Viking*, *Sylria*, and (later) *Potomac* and *Kanaka*. These were then given commanding officers from the Navy.

At the beginning of July the organization of the Auxiliary Naval Force included Rear-Admiral Henry Erben, U. S. N., retired, as chief, with headquarters at No. 39 Whitehall street, New York. Attached to his staff were a medical inspector, a surgeon, an assistant surgeon, a pay inspector, an assistant paymaster, 6 chief engineers, 2 naval constructors, and 2 lieutenants. The light-house inspectors were acting as assistants to the chief in the various districts, as above described. Seventeen vessels were then being put in commission, for the complements of which Admiral Erben estimated that 73 officers and 500 men were necessary. It was contemplated putting four more monitors in commission. Twelve hundred men had been enlisted and sent to receiving ships or stations. Seventy-seven officers from the Naval Militia had been nominated for commissions and 64 had been commissioned. Only 16 vessels on the Atlantic and Gulf coasts were actually in commission, including 5 receiving ships—the *Minnesota* at Boston, the

New Hampshire at New York, the *Portsmouth* at Hoboken, N. J., the *St. Louis* at Philadelphia, and the *Dale* at Baltimore (Appendix Ja)—and the monitors *Catskill*, *Lehigh*, *Jason*, *Nahant*, *Montauk*, *Nantucket*, and *Passaic*. The remaining 4 vessels were at navy-yards, being prepared for service.

On Saturday, July 9, forty-four days after the signing of the joint resolution, I was ordered to relieve Rear Admiral Erben, and assumed the duties of chief of the United States Auxiliary Naval Force, with headquarters at the Navy Department. A copy of my orders is annexed (Appendix K). I immediately made room for the headquarters in the Office of Naval Intelligence, and with but one assistant, Lieut. Herbert L. Satterlee, U. S. N. (at that time attached to the Coast Signal Service), undertook the completion of the details of the Department's plans.

The submarine mines were receiving occasional damage, owing to the lack of proper protection. The officers who had been commissioned and the 1,200 men who had been enlisted were waiting on the various receiving ships for assignment to active duty. The converted vessels at the navy-yards were without complements, and there was need of small dispatch boats and tugs. The Naval Militia, which had recruited up to its legal strength at the request of the Department, was not fulfilling the part which had been assigned to it in case of war; its officers and men were becoming restless at the inactivity; its facilities were not being fully employed, and the Navy was still short of men for its seagoing ships.

The Department was overwhelmed with requests for active service and the mustering in of organizations which had been recruited for the war. The situation was urgent and prompt action was necessary. I gave all the time that I could spare from my duties as Chief Intelligence Officer and Superintendent of the Coast Signal Service and made myself familiar with the situation, relying upon Lieutenant Satterlee's intimate knowledge of the Naval Militia, as he had been for years the navigating officer of the First Naval Battalion, New York, and more recently Naval Militia aid on the staff of the governor of New York. I found at once that no use had been made of the services of the commanding officers of the naval brigades of Massachusetts and New York, both of whom were ex-officers of the United States Navy and had been studying for years the duties of their forces in the naval patrol and defense of the seacoast of their respective States. They were immediately examined, recommended for appointment, commissioned, and substituted for the light-house inspectors in charge of the districts in which they were located.

As rapidly as possible the other light-house inspectors were, in succession, relieved of the extra duties which had been imposed upon them in connection with the Auxiliary Naval Force, and the senior officers (not already afloat) of the State naval militias were ordered to duty as

my assistants in the various districts. In the meantime the naval officers commanding the monitors were detached and assigned to other duty, and the command of these vessels was intrusted to competent officers of the force who came from the Naval Militia. The officers and men of some of the States that had not been given an opportunity to enter the service were examined, and, if proficient, were respectively commissioned and enlisted, those from Louisiana and Florida being sent to the navy-yard at Pensacola. Within forty-eight hours from the time of assuming command I was enabled to get two of the converted yachts at New York on duty patrolling the mine fields, and on July 12 they were joined by a third. In rapid succession the various yachts and tugs were furnished with officers and crews, put in commission, and assigned to active duty.

After filling the complements of these vessels, those monitors which were still being fitted out at the navy-yards were supplied, and an effort was made to send all the men remaining on the receiving ships to the front. To this end a draft of men was sent from the Pensacola yard to the naval station at Key West, and other drafts were forwarded from receiving ships on the Atlantic coast to the Norfolk Navy-Yard for transportation south by the first public conveyance. This was done, not only to complete the plans of the Department for using the Naval Militia, but to obviate the necessity of enlisting more men for general service. Several hundred men enlisted from the Naval Militia were sent to Cuban waters from Key West and distributed among the vessels of the first and second squadrons of the North Atlantic fleet, where they saw actual warfare at Santiago, in the battle which resulted in the destruction of Admiral Cervera's squadron.

Our naval successes and the situation of the war in the latter part of July made any further increase of the force unnecessary, and the Department determined not to issue any more commissions or make any more enlistments. I append a form of the certificate given to those who passed their examinations, but whose services were not needed. (Appendix Ka.) The protocol of peace was signed while some of these drafts of men were on their way to the south, and it was therefore necessary to return them to the receiving ships from which they had started.

The Auxiliary Naval Force on the Pacific coast, which had been under the command of Rear-Admiral Joseph N. Miller, U. S. N., separate and distinct from Rear Admiral Erben's command, was transferred to me, and the Pacific coast was thereupon organized as a district, and Lieut. W. E. Gunn, U. S. N., who entered the service from the California Naval Militia, was appointed my assistant in charge. The four revenue cutters attached to this district patrolled the coast from San Francisco to Alaska, in order to protect the treasure-laden vessels from the Klondike gold fields.

When at its maximum strength, and after the 7 vessels hereinbefore

named had been detached, the fleet of the Auxiliary Naval Force consisted of 41 vessels.

The yacht *Shearwater*, the torpedo boat *Manly*, and the monitors *Canonicus* and *Mahopac* were attached to, it but were never put in commission.

The complete organization of the Auxiliary Naval Force was as follows:

At headquarters—J. R. Bartlett, captain, U. S. N., retired, chief; Herbert L. Satterlee, lieutenant, U. S. N., chief of staff; Henry W. Fitch, chief engineer, U. S. N., retired, fleet engineer; Warren L. Sawyer, assistant paymaster, U. S. N.; 1 chief yeoman, 1 stenographer, and 1 messenger.

The first district, from the most easterly point of Maine to Hampton Harbor, New Hampshire—R. J. Beach, lieutenant, U. S. N., assistant to chief, with headquarters at Portland. To this district were attached the monitors *Montauk* and *Wyandotte*. The latter, however, was never sent to her station at Bath, Me.

The second district, from Hampton Harbor, New Hampshire, to Newport, R. I.—J. W. Weeks, lieutenant, U. S. N., assistant to chief, with headquarters at Boston. Attached to this district were the U. S. R. S. *Minnesota*, the monitors *Catskill* and *Lehigh*, the tug *Seminole*, and the yacht *Inca*.

The third district, from Newport, R. I., to Seabright, N. J.—J. W. Miller, lieutenant-commander, U. S. N., assistant to chief, with headquarters at New York City. Attached to this district were the U. S. R. S. *New Hampshire*, the monitors *Jason*, *Manhattan*, and *Nahant*, the yachts *Aileen*, *Elfrida*, *Enquirer*, *Freelance*, *Huntress*, *Restless*, and *Shearwater*, and the torpedo boat *Manly*. The monitor *Manhattan*, however, was never sent to her station at Newport; the *Jason* was stationed at Fishers Island, and the *Nahant* at Tompkinsville.

The Fourth district, from Seabright, N. J., to Metomkin Inlet, Virginia, Lieut. J. S. Mucklé, U. S. N., assistant to chief, with headquarters at Philadelphia. Attached to this district were the U. S. R. S. *St. Louis*, the monitors *Canonicus* and *Mahopac*, and the side-wheel steamboat *Arctic*.

The Fifth district, from Metomkin Inlet, Virginia, to New River Inlet, North Carolina, Isaac E. Emerson, lieutenant, U. S. N., assistant to chief, with headquarters at Baltimore, Md. The vessels attached to this district were the U. S. R. S. *Dale*, the monitor *Ajax*, and the yacht *Sylph*.

The Sixth district, from New River Inlet, North Carolina, to Jupiter Inlet, Florida, George L. Morton, lieutenant, U. S. N., assistant to chief, with headquarters at Port Royal, S. C. The vessels attached to this district were the monitor *Nantucket* and the tugs *Cheyenne*, *Chickasaw*, and *Waban*.

The Seventh district, from Jupiter Inlet, Florida, to Perdido Entrance,

Florida, J. C. Sutherland, lieutenant, U. S. N., assistant to chief, with headquarters at Pensacola, Fla. Attached to this district was the tug *Tacoma* and the battalion of the Auxiliary Naval Force at the Pensacola Navy-Yard.

The Eighth district, from Perdido Entrance, Florida, to the most westerly point of Texas, J. W. Bostick, lieutenant, U. S. N., assistant to chief, with headquarters at New Orleans, La. Attached to this district were the monitor *Passaic* and the tugs *Choctaw* and *Powhatan*.

The Ninth district, the Pacific coast of the United States, W. E. Gunn, lieutenant, U. S. N., assistant to chief, with headquarters at San Francisco. Attached to this district were the revenue cutters *Corwin*, *Grant*, *Perry*, and *Rush*, and the tugs *Active*, *Iroquois*, and *Vigilant*.

Pay Inspector J. H. Stevenson, U. S. N., retired, was attached to the headquarters of the Third district, and Assistant Paymaster Webb V. H. Rose was attached to the headquarters of the Seventh district. Chief Engineer Alexander Henderson, retired, was attached to the headquarters of the Third district. Chief Engineer E. D. Robie, retired, was attached to the headquarters of the Second district, and Chief Engineer W. W. Dungan was attached to the headquarters of the Fifth district.

There were commissioned in the Naval Service from the Naval Militia, lieutenant-commander, 1; lieutenants, 56; lieutenants (junior grade), 44; ensigns, 95; surgeons, 19; assistant paymasters, 14; engineers, 21; mates, 13; a total of 263 officers; and there were enlisted 3,832 men from the same source. The officers furnished their own uniforms and side arms, and the men came into the service armed, uniformed, and equipped. A table showing the number of officers and men from the Naval Militia of each State is hereto annexed (Appendix L). I also append a table showing the points at which the various vessels were stationed and the character of duty performed by each (Appendix M).

About the middle of August, acting under instructions from the Department, I began to put out of commission the patrol boats as fast as their presence at the mine fields was no longer necessary, the submarine mines being removed. The monitors were ordered to proceed to League Island Navy-Yard, with the exception of the *Passaic*, which was ordered to Pensacola, and the *Nantucket* to Port Royal, and the revenue cutters were returned to the Treasury Department. There was some delay in getting all the monitors that were destined for that point to League Island, owing to the fact that they had to be convoyed by tugs, which at that time were hard to procure. The tugs attached to the force were then, with one exception, in Gulf waters, and as soon as they were no longer needed for duty connected with the navy-yards and naval stations they were also laid up. The last yachts to be put out of commission were the *Aileen* and *Elfrida*, which had been for some time used in the quarantine patrol at Camp Wikoff, Montauk Point, New York; however, on the 26th day of September all the vessels of the force had been placed out of commission and their crews discharged.

I have temporarily retained the services of my 9 assistants in the various districts for the purpose of properly closing up the affairs of the districts, perfecting their records, and making full reports as to the number of officers and men admitted into the force in the districts, giving their grades and ratings, the character of the service performed in the districts, the suitability of the vessels assigned for the purposes for which they were employed, the manner in which they stood the requirements of the service, and the characteristics of the district from a defensive point of view, taking into consideration the needs of a thoroughly equipped naval force to protect them. They are also incidentally carrying out the suggestions of the Secretary's report, above referred to, as to "grouping and registering" in their districts the men available for service in a United States Naval Reserve.

The following changes were made in the list of assistants: Lieut. R. J. Beach was relieved in the First district by Lieut. (J. G.) William H. Clifford, jr., and Lieut. Commander J. W. Miller, in the Third district, by Lieut. E. C. Weeks. The headquarters of the Sixth district was removed from Port Royal, S. C., to Wilmington, N. C. I think that the data secured by these assistants and the information contained in their reports will be of value to the Department for reference and for guidance in any further emergency, and will file them in the naval militia office.

As this is the first time that the Naval Militia has been called into service by the United States, it is of great interest to note the character of work performed by it and the manner in which it fulfilled the requirements previously outlined by the Department. Apart from their services on seagoing ships (in which they acted as a substitute for a naval reserve and acquitted themselves far better than could have been reasonably expected, in view of their lack of training for such life), and of their services in the Coast Signal Service (in which they more than fulfilled the highest expectations of their friends concerning them), the efficiency of the officers and men of the Naval Militia must be judged from their work in the Auxiliary Naval Force.

The character of the work performed was twofold—first, guard duty, and second, patrol duty. The scope of the former was limited to the possibilities of the old type of monitors. It must be remembered that these vessels were hastily put into service after having been laid up for a period of over thirty years, and that after the most necessary repairs had been made at the navy-yards there was still a large amount of work which had to be done by their crews to fit them for the service for which they were intended. This was done cheerfully and well by officers and men, who were naturally anxious to be at the front, but who also fully appreciated the exigency which required coast-defense vessels to protect home ports. The routine duties of the first few weeks on these vessels were performed under very adverse circumstances, as repairs were going on (with the attendant noise, confusion, and dirt), painting was being done, and coal, provisions, etc., were being got on board.

After the vessels had been cleaned up and the crews shaken down, and they had reached their stations, a high degree of discipline and efficiency was attained. The crews were regularly exercised and drilled in boat work and artillery with the secondary batteries; target practice was also performed with the old 15-inch smoothbore guns. Many of these vessels cruised from port to port in the district to which they were attached, went to sea for target practice, and entered harbors by day and night, thereby showing that the officers and men of the Naval Militia were thoroughly competent to handle ships of that or a similar type, and there was no mishap of even the slightest character on any of the ten monitors during the four and a half months in which they were in service. The monitors were brought back to be put out of commission in excellent condition, and were so readily handled and manned by their officers and crews that it is fair to believe that the coast-defense vessels in the future can be turned over to the Naval Militia with entire confidence.

The patrol duty was performed by converted yachts and tugs, and the officers and men displayed special aptitude for this work, owing to their intimate knowledge of local waters. Their acquaintance with harbors and bases of supplies, with the local prevailing weather conditions, and with the landmarks which would have to be relied upon in case of the removal of the aids to navigation, make them the force, par excellence, for the work of an inshore patrol. In the duty of protecting the mine fields the high order of intelligence of the officers and men, as well as their knowledge of the local personnel in the merchant marine, aided them in properly enforcing the harbor regulations and in dealing with merchantmen. Their officers also proved to have considerable ability in the handling of small vessels, and the fact that there were no accidents or casualties in the fleet shows that they were qualified to perform their duties. The results of their practice in scouting and reconnoissance work showed that they would have been of great value to the service if the seat of war had unfortunately been transferred to these shores. In order to illustrate the aptitude of these officers for the character of service mentioned, I annex a copy of an "Information blank for signal and boat reconnoissance parties," returned by two of the officers attached to the Third district, who were sent to report upon the character of communication by water between Shinnecock Bay and Peconic Bay, Long Island, New York. (Appendix N.)

It is not, however, merely in the performance of guard and patrol duty that the Naval Militia has been of service to the Department, but in many other ways, and the officers and men of the Navy have cause for sincere thankfulness that the Naval Militia existed during the war with Spain. Its officers and men have cheerfully and patiently endured the monotonous and often uninteresting duties connected with shore stations and the coast defense. They put aside whatever ideas they might naturally have had of more active service at the front, and have filled many humble and arduous posts in the navy-yards, on receiving

ships, and even in the offices of the Department. In this way many officers and men of the service were freed from these employments and given a chance for experience at the front in actual warfare—an experience which every officer and man who enters the service covets, no matter from what source he entered it.

It must have been a most gratifying disappointment to those critics in the service who feared that in time of war the officers of the Naval Militia would be tenacious of their rank in the State service and overconfident as to their abilities to see the manner in which they disregarded their titles and accepted commissions of the lower grades, often performing under them work requiring the highest ability. Of the three captains of the Naval Militia in the United States, one was given the grade of lieutenant-commander, owing to his long and honorable record in the Navy, and the other two were commissioned as lieutenants. Of the commanding officers of battalions, none were given a higher grade than that of lieutenant, and some not higher than lieutenant (junior grade). It must be remembered that all of these men left good positions and incomes and that their presence in the service was the only thing that enabled many regular officers to get to the front.

As an evidence of the assistance that the Naval Militia has been to the Navy, I would cite the instance of one of the officers who was assigned to duty in the Department at the outbreak of the war and who was enabled to have a command, owing to the exertions of an officer of the Naval Militia in getting an appropriation from which several vessels were purchased. It was a coincidence that, while this regular officer was absent at the front, his duties were performed for a time by the very officer who had secured the appropriation. There are many other instances which have probably come to the notice of the Department where work was patiently and well performed by the officers of the Naval Militia to the distinct advantage of the officers of the regular service, and the same holds just as true of the petty officers and men. At unexpected times the efficiency of the Naval Militia was tested, notably when the U. S. S. *Buffalo* and the U. S. S. *Rainbow* had to be taken from the Norfolk Navy-Yard to the navy-yard at New York.

On the 16th of July it was necessary that these vessels should be sent at once to New York for alteration and repair, and there were no regular officers at the disposal of the Bureau of Navigation to take them there. In the emergency I was called upon to furnish a detail of officers for both ships, the *Buffalo* being a vessel of 7,500 tons and the *Rainbow* of 3,254 tons. Lieut. William H. Stayton, U. S. N., commanding the U. S. S. *Enquirer*, and Lieut. E. M. Harmon, U. S. N., commanding the U. S. S. *Nahant*, were selected to command these vessels, respectively, and these officers, with a detail of seven others from the third district, reported at the Norfolk Navy-Yard within twenty-four hours after I was requested to undertake this matter. The vessels were prepared for sea, crews from the receiving ship at Norfolk

put on board, and the passage to New York safely accomplished, in spite of a dense fog which prevailed, and they were delivered to the commandant of the New York Navy-Yard, without the services of a pilot being employed, in the most seamanlike manner and with the utmost dispatch. Thirty-one hours after the *Buffalo* passed out the Virginia Capes Lieutenant Stayton tied her up at the dock in the New York Navy Yard without the aid of a tug.

In the routine work of the navy-yard at Pensacola, Fla., services of the most practical and efficient kind were performed by Lieut. J. C. Sutherland, U. S. N., my assistant in the Seventh district, who was on duty there in command of a contingent of the Auxiliary Naval Force, and much of the work of the naval station at Port Royal, S. C., was performed, during the war, by officers attached to this force. In writing of the men of the force (who came from the Naval Militia of South Carolina), the commandant of the Port Royal Station expresses what seems to have been the general opinion which the regular officers formed of the men of the Naval Militia, when he says: "They were intelligent, and obedient young men, a credit to the service." The vessels assigned to duty at Montauk Point were very useful to the Marine-Hospital Service there, as is shown by a letter from Supervising Surgeon-General Walter Wyman, Marine-Hospital Service, which I annex hereto. (Appendix O.) These vessels were attached to the command of Lieut. Commander J. W. Miller, U. S. N., who, in connection with this and all the other duties intrusted to him, proved a most efficient and experienced officer. I wish also to commend the assistance rendered by Lieut. John W. Weeks, U. S. N., in charge of the second district. Both of these officers showed the most untiring zeal in the organization and management of their commands.

On the whole, the work of the officers and men from the Naval Militia was performed in a thorough and efficient manner, but our recent experience shows that there is a certain class of work which they should not undertake to do. Their anxiety to see active service and to get away from receiving ships led many men of education to enlist as coal passers and in other ratings which they were not physically competent to fill. This, of course, was quickly discovered and easily remedied without mishap, and only resulted in the discomfiture of the men themselves. In some cases, too (while commissions were being given without examinations), officers undertook duties for which they were not properly qualified, but they were quick to realize their mistake and were assigned to duty which they were found competent to perform after going before examining boards. When it is considered that the Naval Militia put its men promptly in the service when they were most needed, and that no time or money had to be spent in arming, uniforming, or equipping them, it is apparent that the country realized the full benefit of the appropriations which have been made during the past six years, and of the services which have been rendered by the Department in drilling and instructing them.

The most casual investigation of the subject shows that the State Naval Militias are popular and efficient organizations of the State service in almost all the States in which they exist. In my opinion, the policy of the Department in carrying out the wise provisions made by Congress to foster and develop the Naval Militias of the States should be continued in the future. The success of those organizations which have received the best support from their respective States shows that the efforts of the Department should be directed to encouraging and raising the standard of those located in States less able to provide for their naval forces. Of course, disparities in personnel, in climate, and in State appropriations will always result in differences in the Naval Militias of the States, and it seems to me that it is only by a careful study of the existing conditions, and the granting by Congress to the Department of a greater latitude in applying the appropriations, that the best results can be obtained. No general rule or standard can be made that will apply.

The Department has made a wise selection in the detailing of Lieut. W. H. H. Southerland, U. S. N., to take charge of the naval militia interests, and the work of development should be prosecuted along the lines of the suggestions made in the last report of the Secretary of the Navy.

In view of the State support given to the Naval Militia, and of their local popularity, they can never be converted into a United States Naval Reserve, and no attempt should be made to accomplish this. In the dominant emergency of the war, they were diverted to a certain extent from the services for which they were intended in the second line of defense and were used as a naval reserve. They were called upon (as has been shown herein above) to augment the crews of the blue-jackets on our fighting ships, and furnished entire complements of officers and men for auxiliary cruisers (which in many instances were used as fighting ships), and in various ways were employed to supplement and assist in the work of the Navy. This should never happen again. The necessity of establishing a United States Naval Reserve, which the Department has for many years pointed out, has been most thoroughly proved. The time is appropriate to ask for legislation on the subject, and the Department can no doubt rely on the sagacity and energy of the present Committees on Naval Affairs in the Senate and House of Representatives to procure the authority of law.

My position as Chief of the Auxiliary Naval Force has given me an opportunity to observe the various conditions prevailing on the Atlantic, Gulf, and Pacific coasts, and the possibilities in the way of personnel and material. I have also had the benefit of the ideas on this subject of the officers from all of the nine districts, who had been interested in it and made it a study. During this war the situations which constantly developed and the problems which arose for prompt solution made plain the proper relation between the Naval Militia and a United States Naval Reserve, and suggested the most natural, easy,

and economical method of obtaining the latter. It has become apparent, in the first place, that the Naval Militia has a distinct and important function to perform in the second line of defense; that a certain proportion of its officers and men (which number can be increased by the guidance of the Department) is capable of becoming a part of a United States Naval Reserve, but that for the latter purpose most of the naval militiamen have not had sufficient experience at sea. Let us then revise the character of the instruction and drill given to the Naval Militia, and give them better opportunities to become familiar with the vessels and guns which they will be expected to man and handle, so that at the conclusion of a man's term of active service therein and when he is a Naval Militia "veteran" he will be competent to pass into the United States Naval Reserve.

After their experience in this war probably 90 per cent of the officers and men who came into the service from the Naval Militia are competent to fill, in a United States Naval Reserve, the grades and ratings which they held at the time of their honorable discharge. Moreover, it is not improbable that the popularity of our branch of the service and the well-merited applause with which these men have been received at home would lead them to enter a naval reserve. Legislation authorizing this would at once furnish a strong nucleus for the personnel of a United States Naval Reserve widely distributed over the country and far-reaching in its influence for the advancement of the general interests of the Navy.

Another branch of the service most important in the formation of a United States Naval Reserve is the Revenue-Marine Service. The personnel of this service is well disciplined, of a high order of intelligence, and most intimately acquainted with the harbors and channels of our seacoast. They are seafaring men, and only need instruction in gunnery and the mechanical appliances on board a man-of-war to make them men-of-warsmen.

The personnel of the United States Life-Saving Service has also proved in the war that it would fill a most valuable place in a United States Naval Reserve, and the same is true of the United States Lighthouse Service. The large body of competent officers, engineers, and seamen of our merchant marine was hardly drawn upon in this war, except in cases where vessels were purchased or chartered and some or all of their officers and crews entered the service with them. There will be found, however, in the last number of the Navy Register, and in the files of the Bureau of Navigation, the names of many officers and men from the merchant marine who entered the service in the manner indicated, and these should be included when a United States Naval Reserve is created, and their fellow officers and men in the merchant service stimulated to qualify for admission. I annex a draft of a bill which follows the line of H. R. 6346, introduced in the Fifty-fifth Congress, second session, but which carries out the suggestions above made, and I respectfully submit it for the consideration of the Department. (Appendix P.)

A United States Naval Reserve organized on this basis would be competent to supply the personnel, and to a large extent the matériel, of a naval coast-defense system. Judging from our recent experiences, such a system should include:

(1) *An inshore patrol fleet* composed of revenue cutters, light-house tenders, and vessels already in the possession of the Department, or to be acquired for that purpose, and officered and manned by United States Naval Reserves belonging to (a) Revenue-Cutter Service, (b) the Light-House Service, (c) those who come from the Naval Militia, (d) those who come from the merchant marine.

(2) *A coast signal service*, consisting of specially erected signal stations and those established at light-houses, life-saving stations, and Weather Bureau offices, officered and manned by United States Naval Reserves (a) who come from the Naval Militia, (b) who belong to the United States Life-Saving Service, (c) who belong to the United States Light-House Service, and assisted by the observers of the Weather Bureau.

(3) *A port guard and torpedo fleet*, consisting of coast-defense vessels, monitors, and torpedo boats, officered and manned by United States Naval Reserves (a) who come from the Naval Militia, (b) who come from the merchant marine.

(4) *A navigating reserve*, from which to supply the emergency needs of the Navy and the vacancies caused by casualties, comprising receiving ships or stations, at which in time of war should be assembled all the United States Naval Reserves from the various sources indicated who are qualified as seamen, except those detailed for duty in the first and third branches of the naval coast-defense system enumerated above.

In such a naval coast-defense system the Naval Militia would fill a most important part. Lieut. J. C. Colwell, U. S. N., writing on the subject of "Naval reserve and coast defense" in 1888, says in this regard:

The Naval Militia branch is placed first in importance, because it is upon the coast defenders that at first the brunt of a maritime war would fall, and the men to bear the weight of a foreign naval attack should have the best system of organization, drill, and equipment that it is possible to give. The organization being local, the officers and men would have an intimate knowledge of the capabilities of their immediate neighborhood for offense and defense, and would be much more valuable at such a place than would a body of entirely strange sea faring men suddenly ordered to that service.

The Naval Militia has brought the Navy in touch with the people in a way in which nothing else could have done in time of peace. It is a valued addition to the military establishment of the various States, and when more fully developed will be a stepping-stone to the United States Naval Reserve. It should be to a large extent a school for the officers of the latter, and from the United States Naval Reserves alone should accessions to the fighting strength of the Navy be made in time of war.

In such a gradual development the intelligent and patriotic citizen may serve his State as a naval militiaman, and thus be enabled to qualify as a United States Naval Reserve, and in time of war go into active service with a degree of proficiency which will release him from the performance of service in those ratings which call simply for physical labor and enable him to exercise the highest percentage of his efficiency.

The large amount of detail connected with the administration of the Auxiliary Naval Force greatly restricted my opportunities for personally visiting the several districts and inspecting the vessels. To an unusual extent the successful operation of the service depended upon an intelligent execution of orders issued from headquarters. I wish to congratulate the officers and men of the force on the results which they attained despite the necessary haste in which it was inaugurated and their lack of practical experience, and to commend them for their faithfulness and zeal.

My assistants in charge of the several districts have given unremitting and faithful attention to their exacting and arduous duties, and I am under great obligation to them for their zealous and intelligent handling of the details of the work of the force during its season of activity, and for the expedition and thoroughness which have marked all the steps incident to bringing its operations to a close. I append copies of the forms of honorable discharge given to officers and enlisted men. (Appendix Q.)

I esteem myself particularly fortunate in having had the assistance of Lieut. Herbert L. Satterlee, U. S. N., as my chief of staff. For years past he has been identified with the most progressive efforts for the practical development of the Naval Militia, and its advancement in efficiency. In the present emergency he has labored day and night with untiring energy, and his services have been of the highest value in the aid he has rendered in connection with the management of the details of the work. Through his assistance, also, I am enabled to make the present report much more full than, with the pressure of other duties, would otherwise be possible. I would suggest that the Department avail itself, whenever practicable, of Lieutenant Satterlee's familiarity with naval militia matters.

I am much indebted to the chiefs of the several bureaus for their always ready assistance and their desire to further the prompt dispatch of business, which might otherwise have been sadly hampered by too great regard for nonessentials of form and routine.

In closing my report I wish particularly to thank the Department for the confidence that has been placed in me, enabling me to carry on successfully this important duty which has so often required prompt decision and immediate action.

Very respectfully,

JOHN R. BARTLETT,
Captain, United States Navy (Retired),
Chief United States Auxiliary Naval Force.

THE ASSISTANT SECRETARY OF THE NAVY.

APPENDIX A.

MARCH 23, 1898.

SIR: You are hereby directed to prepare, with all possible dispatch, a scheme for utilizing the available resources of our Atlantic ports in the formation of a mosquito flotilla in general accordance with the methods proposed by the Naval War College.

You will suggest for each important locality the names of suitable vessels, in such numbers as you may think proper, and fitted as improvised gun vessels, rams, or torpedo boats, their armament, if any, how and where obtained and mounted, how their captains and crews may be secured from the merchant service or Naval Militia, the proposed appointments as volunteer officers, or ratings as enlisted men, and you will prepare an organization for the whole coast, and rules for the government of each local division.

The Department confines itself to indicating the outlines of what it desires, leaving the details to your discretion. It reminds you that promptness, efficiency, and economy are necessary.

You will submit, as soon as possible, a résumé of your scheme, which must be so perfected that it can be put into instant execution on the issuing of orders from the Department.

You are authorized to perform such travel as may be needed, and directed to report from time to time your movements.

It is suggested that you make New York your headquarters. In that event, the commandant of the navy-yard at that place will give you such clerical aid as you may require. The demand for officers is so great that it is impossible to assign you other assistants. You are hereby detached from present duties.

Very respectfully,

JOHN D. LONG, *Secretary*.

Commander HORACE ELMER, U. S. N.,
Cramp's Shipyard, Philadelphia, Pa.

APPENDIX B.

APRIL 14, 1898.

SIR: Referring to your letter of the 13th instant, you will please arrange the different districts in connection with the coast defense system with the mosquito flotilla, so that each district will conform with the corresponding district as subdivided by the Light-House Board of the Treasury Department.

Respectfully,

JOHN D. LONG, *Secretary*.

Commander HORACE ELMER, U. S. N.,
Navy-Yard, New York, N. Y.

APPENDIX C.

APRIL 19, 1898.

SIR: Referring to the Department's order of the 23d ultimo, and to subsequent letters addressed to you in regard to a scheme for utilizing the available resources of the Atlantic ports in the formation of a mosquito flotilla, you are hereby directed to take charge of the formation of said mosquito flotilla in accordance with the above-mentioned correspondence and with the following, by which you will be guided:

It is of course impossible to move actively in the matters with which you are charged until war is declared and the President calls out the Naval Militia. In the meantime you are directed to use all possible dispatch to perfect your scheme, so that at each port the vessels you propose to assign to the defense will be selected, their armament allotted, upon your request, by the Chief of the Bureau of Ordnance, and held in readiness for your orders. Contracts should be prepared for the

work to be done upon the vessels in local establishments; the officers of the Naval Militia who are to command the vessels should be nominated for your consideration by the local chief of the Naval Militia and the interest of these officers enlisted, and the crews (also from the Naval Militia) set apart by name for each particular ship.

The officers should be given to understand that they are to receive acting appointments in the United States Navy, and the men, that they are to enlist for one year, or during the war, unless sooner discharged. The officers and men should be kept together as far as practicable, and the men should serve under their own officers. In short, every possible latitude is left to your discretion in the planning. When directed to put your plan into execution nothing more should be required than to send telegraphic instructions to the officers, and every person interested will, presumably, know what to do, and carry out the instructions with dispatch.

The officers assigned to the different districts of the system of coast defense, in connection with the mosquito flotilla, will be directed to report to you.

Keep the Department fully advised as to all the developments in connection with this duty.

Respectfully,

JOHN D. LONG, *Secretary.*

Commander HORACE ELMER, U. S. N.,
In Charge of Mosquito Flotilla Work,
Navy-Yard, New York, N. Y.

APPENDIX D.

NAVY DEPARTMENT, OFFICE OF ASSISTANT SECRETARY,
Washington, D. C., April 28, 1898.

SIR: The Department returns herewith the telegram to Commander Horace Elmer, from the commanding officer of the Maryland Naval Militia, which was inclosed in your letter of April 27. A similar telegram has been received by the Department.

The Department incloses herewith copy of a joint resolution providing for the organization and enrollment of the United States Auxiliary Naval Force for coast defense which is now being considered by Congress. Until the passage of this act it will not be possible to carry out the intentions of the Department with regard to this organization. Under the naval appropriation act the Department is now making appointments of acting officers, but it is intended that they shall serve in the Regular Navy.

The United States Auxiliary Naval Force is to be an entirely separate organization, appointments and enlistments being made by you, as chief of the United States Auxiliary Naval Force, as soon as there shall be a warrant by law. Under the terms of the naval appropriation act, appointments of officers are made only to the rank of lieutenant and below. In the various State organizations there are several naval militia officers above this rank whose services can not be utilized afloat, nor would it, in the judgment of the Department, be wise to give them grades higher than lieutenant in the Auxiliary Naval force. As the coast is to be divided into districts, and each district is to have a naval officer at his head, the appointments and enlistments in the United States Auxiliary Naval Force will be left to you and your assistants, subject to the approval of the Navy Department. As it has been stated above, however, it will be necessary to wait the action of Congress before any appointments or enlistments are made.

Very respectfully,

T. ROOSEVELT, *Assistant Secretary.*

Rear-Admiral HENRY ERBEN, U. S. N.,
In Charge of Coast Defense System,
United States Naval Rendezvous, New York, N. Y.

APPENDIX E.

NAVY DEPARTMENT, *Washington, May 6, 1898.*

SIR: Referring to the question of the patrol of defensive-mine fields at the different harbors where the auxiliary-defense fleet is stationed, the Department considers that the maintenance of the mine fields in proper condition and repair, and the furnishing of necessary craft for doing that work, devolves upon the War Department.

Such of the smaller vessels of the auxiliary defense fleet as you may think proper, when not required for duty of a more strictly military character, will be employed in patrolling the neighborhood of the mine fields, for the purpose of obliging friendly vessels to cross the same by and through the channels that have been marked for that purpose by the Army.

Respectfully,

JOHN D. LONG, *Secretary.*

Rear Admiral HENRY ERBEN, U. S. N.,
In Charge Auxiliary Defense Fleet.

APPENDIX F.

NAVY DEPARTMENT, *Washington, May 17, 1898.*

SIR: After consultation with the War Department, this Department has consented to patrol the mine fields of the various ports in so far as may be necessary to oblige vessels crossing the said fields to keep in the channels marked by the Army, and the Navy will also patrol the mine fields for the purpose of military defense against the enemy, the Army to maintain their mine fields in proper repair and condition for service.

This will be one of the duties of the Auxiliary Naval Force for Coast Defense, and you will give the necessary instructions in the various districts to carry this into effect as soon as you are furnished with a sufficient number of vessels ready for service.

Very respectfully,

CHAS. H. ALLEN, *Assistant Secretary.*

Rear-Admiral HENRY ERBEN, U. S. N.,
39 Whitehall Street, New York City.

APPENDIX G.

NAVY DEPARTMENT, *Washington, May 26, 1898.*

INSTRUCTIONS FOR THE ENLISTMENT OF AUXILIARY NAVAL FORCE.

1. Officers and men must be given one year's leave from the State authorities.
2. At the top of the first and main sheets of the enlistment records must be noted, in red ink, "Auxiliary Naval Force."
3. The enlistments must be made for "one year's general service, unless sooner discharged," which must be indorsed with red ink on the first and main sheets of the enlistment records.
4. On the same sheets must also be noted, "Discharge will be granted upon request, provided the exigencies of the service will permit."
5. Officers must be examined for the grades to which they may be appointed, for one year if successful, and according to the duties they will be expected to perform.
6. Men will be examined for the ratings which they will be expected to hold, and will be enlisted according to article 797, paragraphs 1 and 2, Navy Regulations, 1896. Petty officers will then be given acting appointments by their commanding officers.

7. Officers and men will be examined physically, and slight disabilities will be waived, taking into consideration the duties to be performed. Age and height limits will also be waived.

8. All disabilities waived will be entered on the enlistment records or attached to the appointments.

Respectfully,

A. S. CROWNINSHEILD,
Chief of Bureau.

The SECRETARY OF THE NAVY.

Approved.

JOHN D. LONG, *Secretary.*

APPENDIX H.

EXAMINATION FOR GRADE OF LIEUTENANT.

SEAMANSHIP.

Storm trysail. Describe, get up from below, bend and set.
Trysail already bent. Describe and set.
Describe various anchors, naming parts.
Anchors on bows. Get off and let go.
Ship anchored. Get under way. Describe each action in turn.
Chains. All about them. Bring to, slipping, shot bitter end and how and where made fast, mooring swivels, shackles, how placed on chain.
Compressors and controllers. Shackle pins and marking.
Describe process of leading out an anchor with small boat or boats.
Shift from steam to hand steering gear.
Relieving tackles.
Rudderhead gone. What do?
Rudder gone. What do?
Rudder gone with other vessels in company. What do?
Heave to.
Heave to with a drag.
Heave to with a sea anchor. Which describe.
Use of oil.
Sight a light at night. What do?
Man overboard. Boats swung in. Describe every action until man is picked up.

NAVIGATION.

Box the compass in $\frac{1}{4}$ points.
Hand lead, coasting lead, and deep-sea lead; their weights, their lines, how to mark and how to heave them. Heave deep-sea lead on twin-screw vessels.
Describe arming. Its purpose. How the dead-reckoning is checked by it. What does arming bring to the surface?
Describe Walker's sounding machine.
Describe Sir Wm. Thompson's sounding apparatus and depth recorder, and how it is operated.
Mark the log line, and give formula for 28-second glass.
Describe one or two patent logs; two kinds of dials.
Barometer. What is high, low, normal? Relation of thermometer to barometer. Rising or falling barometer indicates what?
Laws of storms. What two motions have they? Northern Hemisphere. How to find the center. How to avoid it. How act in any position. When and how heave to.
Heave to below Hatteras. Above Hatteras, in easterly storm.
Describe the various kinds of charts, and how each is used. What are the meanings of symbols and letters on charts, first, second, third column?

Why is there no scale on Mercator's chart, and how are distances measured thereon?
 Use of compass on chart.
 Danger angles.
 Great circle sailing.
 Rules of the road.
 Buoys: What kind. What shape. How placed.
 Coast lights; light-ships on eastern coast of United States.
 Character of coast, danger, etc.
 Depth of water in channels New York Harbor.
 Range lights, etc., for this district.
 Describe the day's work from sunrise to sunrise.
 Work position up on dead-reckoning.
 Meaning of distance; departure; middle latitude.
 Correct courses for deviation, variation, leeway and current sailing.
 Correct sextant for all errors.
 What sights are taken during twenty-four hours, and for what purposes?
 Position by cross bearings.
 Position by 2 and 4 part bearing of one light or object.
 Position by 4 and 8 part bearing of one light or object.
 Describe noon sight for latitude.
 Describe time sight for longitude.
 What is hour angle?
 Describe amplitude, and when and how taken.
 Describe azimuth, and when and how taken.
 Describe latitude by exmeridian.
 Describe Summer's method and its uses; line of position, line of bearing. Relation of that line to the unobserved body.
 Summer's method, two lines of bearing.
 How could a Summer's line be used in coast navigation?
 Latitude by Polaris.
 Latitude by meridian altitude of the moon or a star.
 Longitude by time sight of star.
 What is the best time to take a time sight, and why?
 Describe mean time, apparent time, sidereal time.
 Describe the chronometer. Its care. Its use.
 Rating the chronometer in a harbor of the United States. In foreign harbors.
 What must be positively known in order to obtain correct rating?
 The compass error and its correction.
 Describe the magnetism of an iron or steel ship.
 Effect of hard or soft iron, and how to correct.
 Place compass and correct by: First, bearing of an object. Second, by reciprocal bearings. What signals used in this latter work? Quadrantal deviation—note position of correctors. Third, heeling error.
 What is a Flinder's bar?
 Construct a Napier's curve.
 Give singsong for recollection of working.

STEAMSHIPS.

The steering engine and its correction.
 After screw-steering gear and how connected to rudderhead.
 Describe anchor engines.
 Describe cargo winches, English and American, and how worked.
 Get up steam in donkey boiler.
 Rig hoisting boom with its gear.
 Remedy for anchor or cargo engines pounding.
 Effect of screw on ship's head.

Stability of ships, and how corrected.
Bulkheads, number of, and how built.
Limbers and valves, water-tight doors.

NAVAL BRIGADE.

Arm and away boats.
Land through the surf on enemy's coast.
Describe boat line of attack.
Deploy skirmishers and divide your force into its proper element.
Place the commanding officer.

SIGNALS.

Method of setting.
International code.
Naval code.
Wig-wag and shapes.
Ardois system of night signaling.

GUNNERY.

Slow-firing guns.
Quick-firing guns.
Rapid-fire guns.
Gun mounts.
Recoil cylinder, how filled.
Recoil of large guns; small guns.
Automatic guns. Describe.
Describe the various breech mechanisms.
Name the sights and describe them.
Gas checks. Breech plugs.
Shot. Shrapnel. Shell. Describe armor-piercing shells.
Describe all kinds of percussion and time fuses.
Primers.

APPENDIX I.

[Form of commission.]

UNITED STATES OF AMERICA.

NAVY DEPARTMENT, *Washington, D. C.*

To all who shall see these presents, greeting:

Know ye, that, reposing special trust and confidence in the patriotism, valor, fidelity, and abilities of ———, the President of the United States does hereby appoint him ——— in the United States Navy from the — day of ———, one thousand eight hundred and ninety —.

He is, therefore, carefully and diligently to discharge the duties of an officer of said grade by doing and performing all manner of things thereunto belonging. And all officers, seamen, and marines under his command are strictly charged and required to be obedient to his orders as an officer of said grade. And he is to observe and follow such orders and directions from time to time as he shall receive from the President of the United States of America or his superior officer set over him, according to the Rules and Discipline of the Navy.

This ——— to be in force during the continuance of the exigency under which his services are required in the existing war, and during the pleasure of the President of the United States for the time being.

Given under my hand and seal at Washington, this — day of ———,
[SEAL.] 189—, and in the ——— year of the Independence of the United States.

By the President:

Registered No. —.

———, Registrar.

———,
Secretary of the Navy.

APPENDIX J.

List of vessels purchased under the appropriation carried by public resolution No. 34.

Class.	Old name.	New name.	Date of purchase.
Tug	J. D. Jones	Apache.....	May 18, 1898
Do.....	Kate Jones.....	Seminole	June 3, 1898
Do.....	Bristol	Cheyenne.....	June 4, 1898
Do.....	Hercules.....	Chickasaw	June 15, 1898
Do.....	Confidence	Waban	Do.
Yacht	Stranger	Stranger.....	June 6, 1898
Do.....	Huntress	Huntress	Do.
Do.....	Eugenia	Siren	June 7, 1898
Do.....	Inca	Inca	Do.
Do.....	Enquirer.....	Enquirer	June 9, 1898
Do.....	Sylvia	Sylvia	June 11, 1898
Do.....	Shearwater	Shearwater	Do.
Do.....	Kanawha	Kanawha.....	Do.
Do.....	295	Sylph.....	June 13, 1898
Do.....	Elfrida.....	Elfrida	Do..

The yacht *Free Lance* was presented to the Government for the war by her owner, F. Augustus Schermerhorn, esq., of New York.

APPENDIX Ja.

The following is a list of the vessels used as receiving ships for men of the Auxiliary Naval Force, with the dates on which they were received from the States to which they had been loaned for use by the Naval Militia, the dates when they were made receiving ships, and the dates when they were returned to the various States.

- 1. The U. S. S. *Minnesota* at Boston, was received from the State of Massachusetts June 15; made a receiving ship on July 13, and returned to the State on September 14.
- 2. The U. S. S. *New Hampshire* at New York, was received from the State of New York on June 14; made a receiving ship July 13, and returned to the State on September 14.
- 3. The U. S. S. *St. Louis* at Philadelphia, was received from the State of Pennsylvania on July 2; made a receiving ship on July 2, and returned to the State on September 15.
- 4. The U. S. S. *Dale* at Baltimore, was received from the State of Maryland on June 17; made a receiving ship on July 13, and returned to the State on September 14.
- 5. The U. S. S. *Portsmouth* at Hoboken, N. J., was received from the State of New Jersey on June 17; made a receiving ship on July 15, and returned to the State on September 14.

APPENDIX K.

NAVY DEPARTMENT, *Washington, July 9, 1898.*

SIR: Under the provisions of Public Resolution No. 34, approved May 26, 1898, you will assume the duties of Chief of the United States Auxiliary Naval Force, with headquarters in the Navy Department, Washington, D. C., and will be governed hereafter in the performance of your duties as Chief of said Auxiliary Naval Force by the provisions of the above-mentioned resolution and by the instructions con-

tained in a letter addressed to Rear-Admiral Henry Erben, U. S. N., retired, by the Assistant Secretary of the Navy, dated the 28th of April last.

Respectfully,

JOHN D. LONG, *Secretary.*

Capt. JOHN R. BARTLETT, U. S. N., Retired,
Chief Intelligence Officer, Navy Department, Washington, D. C.

Received July 9, 4 p. m., 1898.

JOHN R. BARTLETT.
Captain, U. S. N., Retired.

APPENDIX Ka.

FORM OF CERTIFICATE.

NAVY DEPARTMENT, *Washington, D. C.*

This is to certify that ——— was physically and professionally examined by naval examining boards at ———, found duly qualified for the naval service, and recommended for appointment as a ———.

The proceedings and recommendations of the examining boards were approved by the Department, but by reason of the early termination of hostilities and the exigencies of the service not requiring further appointments the Department has been unable to accept his tender of his services.

This certificate is therefore issued as an expression of the Department's appreciation of the patriotism and fidelity of the above-named citizen, who tendered his services to his country and held himself ready to brave the perils of the sea and hazard the unknown dangers of war.

Given under my hand and seal of the Navy Department this — day of ———, 1898.

[SEAL.]

Secretary of the Navy.

APPENDIX L.

Following are the number of officers and men of the Naval Militia of the several States who entered the United States naval service for the period of the war with Spain:

States.	Lieutenant.	Lieutenant, junior grade.	Ensign.	Mate.	Surgeon.	Engineer.	Paymaster.	Petty officers and enlisted men.
California	2		2	7		3		40
Connecticut	4	5	4			1	1	188
Florida	3		2					57
Illinois	2	4	9					709
Louisiana	4	3	8		1	1	1	215
Maryland	4	4	4		2	3	1	178
Massachusetts	11	6	13		1	2	3	400
Michigan	1	2	5		4	1	1	264
New Jersey	2	3	9		2	3	2	279
New York (1 lieutenant-commander)	11	8	17		4	4	4	805
North Carolina	3	1	2		1	1	1	189
Pennsylvania	5	2	6		1	1		92
Rhode Island		1	6		1			143
South Carolina	3	5	7	6	2	1		211
Virginia	1		1					62
Total (1 lieutenant-commander)	56	44	95	13	19	21	14	3,832

APPENDIX M.

Location of the vessels attached to the United States Auxiliary Naval Force on August 12, 1898.

U. S. S. *Active*, at San Francisco, Cal.
 U. S. M. *Ajax*, at anchor off League Island Navy-Yard.
 U. S. S. *Aileen*, on station at Montauk Point, Long Island, New York.
 U. S. S. *Arctic*, at New Castle, Del.
 U. S. M. *Canonicus*, at League Island Navy-Yard. Not in commission.
 U. S. M. *Catskill*, at anchor lower harbor, Boston, Mass.
 U. S. S. *Cheyenne*, at Key West, Fla.
 U. S. S. *Chickasaw*, at Key West, Fla.
 U. S. R. C. *Corwin*, at San Diego, Cal.
 U. S. R. S. *Dale*, at Baltimore, Md.
 U. S. S. *Choctaw*, at Pensacola Navy-Yard.
 U. S. S. *Elfrida*, on station in "The Narrows," New York Harbor, New York.
 U. S. S. *Enquirer*, at New York Navy-Yard. Out of commission.
 U. S. S. *Freelance*, at New York, N. Y.
 U. S. R. C. *Grant*, cruising off coast of Alaska.
 U. S. S. *Huntress*, at New York, N. Y.
 U. S. S. *Inca*, on station, mine fields, Boston Harbor.
 U. S. S. *Iroquois*, cruising off San Francisco, Cal.
 U. S. M. *Jason*, at anchor off Fishers Island, New York.
 U. S. M. *Lehigh*, at anchor, Provincetown, Mass.
 U. S. T. B. *Manly*, at navy-yard, New York, N. Y. Not in commission.
 U. S. M. *Mahopac*, at League Island Navy-Yard. Not in commission.
 U. S. M. *Montauk*, at anchor off Portland, Me.
 U. S. M. *Manhattan*, at League Island Navy-Yard.
 U. S. R. S. *Minnesota*, at Boston Navy-Yard.
 U. S. M. *Nahant*, at anchor off Tompkinsville, N. Y.
 U. S. M. *Nantucket*, at anchor off Port Royal, S. C.
 U. S. R. S. *New Hampshire*, foot East Twenty-eighth street, New York City, N. Y.
 U. S. M. *Passaic*, at anchor Port Eads, La.
 U. S. R. C. *Perry*, at Astoria, Oreg.
 U. S. S. *Powhatan*, on station, Mobile entrance, Alabama.
 U. S. S. *Restless*, at New York, N. Y.
 U. S. R. C. *Rush*, at San Francisco, Cal.
 U. S. R. S. *St. Louis*, at Philadelphia, Pa.
 U. S. S. *Seminole*, at Boston Navy-Yard.
 U. S. S. *Shearwater*, at New York Navy-Yard. Not in commission.
 U. S. S. *Sylph*, at League Island Navy Yard. Not in commission.
 U. S. S. *Tacoma*, at Pensacola Navy-Yard.
 U. S. S. *Vigilant*, at San Francisco, Cal.
 U. S. S. *Waban*, at Key West, Fla.
 U. S. M. *Wyandotte*, at Boston Navy-Yard.
 A total of 41 vessels.

[Form No. 5 N. M.]

Information blank for signal and boat reconnoissance parties.

Name, rank, or rating of persons collecting information: William C. Bliss, ensign, U. S. N.

District: Third coast defense. Section ———. August 8, 1898.

Locality; Long Island, New York. (Shinnecock Canal from Peconic Bay to Shinnecock Bay.)

Expedition made by four boats from Auxiliary Naval Fleet. Entered canal from Peconic Bay at about 9.40 a. m., the tide in the bay then being within forty-four minutes of low water. Sounding off entrance showed a wide semi-circular bar, with a depth of not more than 1½ feet at any spot. Bottom sandy. Entrance protected by jetties (spile and riprap), extending about 75 feet from high-water mark. Some 30 feet off the entrance a depth of 4 feet was found, and between the jetties, which extend about 200 feet inland, an average depth of 5 feet in the middle and shoaling to either side. Shore, sandy formation. Two hundred feet from inshore end of jetty an indentation surrounded by salt marsh makes to the east. On the west side the land rises from the shore very gradually.

Following on up the canal, pine groves with rising land appear on both sides. The canal bends to the west around a slight point of its west bank and then extends almost due south into Shinnecock Bay. After rounding this point the canal leads under the Montauk Division of the Long Island Railroad, and from a point about 125 feet below the bridge it is bordered by spile-sheathed retaining walls extending 500 feet south from the railroad bridge. From this point to Shinnecock Bay the banks are natural; the railroad bridge crosses the canal at right angles, and is a plate-girder bridge some 20 feet high, supported by a trestle work resting on stone foundation. The canal is somewhat choked beneath this bridge, stone having been dumped in to protect foundations of the bridge.

A strong tide of some 6 knots sets through at this point. The tide runs eight hours on the ebb into Peconic Bay and four hours on the flood at all other points, except the railroad bridge. The tide runs some 3 or 4 knots when at its strength. From this bridge the land slopes gradually to the sea level. About 200 feet south of the railroad bridge is a set of water gates with 23-foot openings, and a hundred feet farther south a highway draw bridge, with a 20-foot opening. From this bridge the canal extends south some 350 feet and opens into Shinnecock Bay. The soundings show a minimum depth of 2 feet and a maximum of 30 feet. Probably not more than 4 feet draft could be taken through at high water. With a little dredging 6 feet could be taken through.

A telegraph line follows the Long Island Railroad with offices at "Good Ground," W. S. W. of railroad bridge, distant 1 mile, and at Southampton, E. ½ S., distant 7 miles.

Telephone connections, long and short distance, may be had at Canoe Place, W. ½ S. one-fourth mile from railroad bridge. A suitable spot for a camp ground may be found on either side of the railroad bridge, the land being high and well-drained, and communication by water and railroad as well as by telegraph being easily at hand and available.

A signal station might well be located at the same spot, a signal pole being visible from either bay. The canal could easily be protected against an enemy, there being plenty of good cover on commanding ground. The reconnoissance party included Lieut. Commander J. W. Miller, Lieut. R. P. Forshew, Ensign W. C. Auferman, Ensign W. H. Carry, Ensign W. C. Bliss.

WILLIAM C. BLISS, *Ensign, U. S. N.*

APPENDIX O.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL, MARINE-HOSPITAL SERVICE,
Washington, D. C., September 22, 1898.

DEAR SIR: The temporary maritime quarantine station established by this service at Montauk Point, N. Y., having been closed, I desire to express to you the thanks of this service for your assistance in furnishing two patrol vessels which were necessary for the proper conduct of the quarantine.

The Secretary of the Treasury has addressed a letter to the Secretary of the Navy,

acknowledging the services rendered by these vessels, but I wish in addition to record in this letter the value of the duties performed by said vessels and my appreciation of your personal active interest in the matter.

Respectfully, yours,

WALTER WYMAN,
Supervising Surgeon-General, Marine-Hospital Service.

Capt. JOHN R. BARTLETT, U. S. N.,
*Chief U. S. Naval Auxiliary Force,
Navy Department, Washington, D. C.*

APPENDIX P.

A BILL to establish a United States Naval Reserve.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That a United States Naval Reserve is herein and hereby established, to consist of all such of the officers, petty officers, and men who entered the United States Navy or the United States Auxiliary Naval Force for service during the war with Spain, and who have received, or shall receive, honorable discharges therefrom, as may enroll therein, such officers, petty officers, and men to be given the respective numbers, grades, and ratings which they held at the time of such discharge, and also all officers and enlisted men of the United States Revenue Marine, United States Life-Saving Service, United States Light-House Service, and United States Coast Survey Service in their grades and ratings.

SEC. 2. That any able-bodied person between the ages of eighteen and forty-five is eligible for enrollment in the United States Naval Reserve: *Provided*, That he is an ex officer or a formerly enlisted man in the United States Navy, or has served as an officer or enlisted man for at least five years and has been honorably discharged from the naval militia authorized by the laws of any State or the United States, or is an ex officer or formerly enlisted man of the United States Revenue Marine, United States Life-Saving Service, United States Light-House Service, or United States Coast Survey Service, or holds a pilot's license, or a certificate as master or mate or chief engineer or assistant engineer, and is serving on a registered or enrolled vessel, or whose principal occupation is on the high seas or navigable waters of the United States, or in the construction, repair, and rigging of vessels, or the construction and repair of marine engines or electric plants or parts thereof. The grades and ratings of these officers and men shall be determined by examination and shall correspond to the grades and ratings existing in the United States Navy.

SEC. 3. That the chief of the United States Naval Reserve shall be detailed by the Secretary of the Navy from the active or retired list of the line officers of the Navy not below the grade of captain, and he shall have the relative rank and pay of a commodore while holding said office, and shall recommend to the Secretary of the Navy for appointment such officers in said United States Naval Reserve as may be necessary for its organization and administration. He shall also command the Naval Coast Defense System.

SEC. 4. That enrollment in the United States Naval Reserve shall be for a period not exceeding five years, and that every person enrolled therein, or who has received a full and honorable discharge therefrom, shall be exempt from service in any other military force of the United States or of any State. The officers thereof shall be duly commissioned, and shall be borne upon the Navy Register as United States Naval Reserves, and the men thereof shall receive from the Secretary enrollment papers and certificates stating their physical and professional ability and the length of their previous service. They shall not be called into active service in time of peace, but, if they so elect, shall perform such annual drills, exercises, or courses of study as the Secretary of the Navy may determine, in which case they shall be subject to the same articles, rules, and regulations, and receive the same pay, allowances, and privileges as the officers and men of the Navy, but no such pay and

allowances shall be in excess of those for the period of duty actually performed by such officers and men. In time of war, or when war is imminent, the President may call into active service all or any part of the United States Naval Reserve, and they shall obey such call under the pain and penalty of desertion.

SEC. 5. That the United States Naval Reserve hereby established shall furnish the personnel for a naval coast-defense system to consist of, first, an inshore-patrol fleet, to which, in time of war or when war is imminent, the United States revenue cutters and light-house tenders shall be attached; second, a Coast Signal Service, which, in time of war or when war is imminent, shall include the establishments of the United States Light-House Service, the United States Life-Saving Service, and Weather Bureau; third, a port guard and torpedo fleet, and, fourth, a navigating reserve, the men of the United States Naval Reserve being distributed among these four branches, according to their qualifications, by the Secretary of the Navy, who shall make regulations for the enrollment, organization, and administration of said reserve.

SEC. 6. That any vessel commanded by a commissioned officer of the United States Naval Reserve, and which shall have in her complement at least five other officers and men of said United States Naval Reserve, shall be known as a United States Naval Reserve ship, and shall have the right to fly a distinctive flag: *Provided*, That the color, shape, and size of such flag and the manner of flying the same shall be prescribed by the Secretary of the Navy.

SEC. 7. That the sum of one hundred thousand dollars, or so much thereof as may be required, is hereby appropriated for the purpose of paying the expenses incidental to the enrollment and training of the United States Naval Reserve and the publication of the regulations governing it, and for otherwise carrying into operation the foregoing provisions of this act, and the same shall constitute a continuous annual appropriation, payable out of any moneys in the Treasury not otherwise appropriated, for the purpose of continuing and maintaining the enrollment and training of the United States Naval Reserve, the same to be expended under the direction of the Secretary of the Navy. The officers and men shall be paid, when in active service, from the "Pay of the Navy."

SEC. 8. That all laws and sections of laws conflicting with the provisions of this act are hereby repealed.

APPENDIX Q.

[Form of honorable discharge for officers.]

UNITED STATES OF AMERICA.

NAVY DEPARTMENT, *Washington, D. C.*

Having served with fidelity in the United States Navy from the — day of —, 1898, to the date hereof in the war between the United States of America and the Kingdom of Spain, declared by Congress to have begun April 21, 1898, you are *honorably discharged*, with the thanks of the Government.

This discharge is issued in accordance with the provisions of the act of Congress approved May 4, 1898, the exigency which, in the judgment of the President, rendered your services necessary having terminated.

Given under my hand and the seal of the Navy Department at the city [SEAL.] of Washington this — day of —, one thousand eight hundred and ninety- —.

By the President:

_____,
Secretary of the Navy.

_____,
_____,
U. S. Navy.
_____.

[Form of honorable discharge for enlisted men.]

HONORABLE DISCHARGE FROM THE UNITED STATES NAVY.

This is to certify that _____, a _____, has faithfully served from the _____ day of _____, 1898, in the war between the United States of America and the Kingdom of Spain, declared by Congress to have begun April twenty-first, 1898.

Is honorably discharged from the U. S. S. _____ and from the naval service this _____ day of _____.

This discharge is issued in accordance with the provisions of the act of Congress approved May fourth, 1898, the exigency, which in the judgment of the President rendered your services necessary, having terminated.

_____,
Commanding U. S. S. _____.

OPERATIONS OF THE NAVAL MILITIA.

NAVY DEPARTMENT,
Washington, November 15, 1898.

SIR: I have the honor to submit the following report upon the Naval Militia of the several States for the current year:

The naval appropriation act, approved March 3, 1897, contained the following provision:

Arming and equipping the Naval Militia: For arms, accouterments, signal outfits, boats and their equipments, the printing of the necessary books of instruction for the Naval Militia of the various States, under such regulations as the Secretary of the Navy may prescribe, fifty thousand dollars.

The following regulations for the allotment of this sum were prescribed by the Department in Naval Militia Circular No. 3, issued January 6, 1898:

Two thousand dollars of the appropriation for Naval Militia will be reserved for the purpose of providing books of instruction for the Naval Militia, which books will be distributed among the various organizations in such manner as the Secretary of the Navy may from time to time direct.

Returns will be made by the governor of each State having a Naval Militia to the Navy Department, certifying to the following:

- Number of commissioned officers.....
- Number of petty officers.....
- Number of enlisted men.....
- Location of the divisions.....

No person serving in any capacity in the land militia, or as a bandsman or servant in the Naval Militia, will be included in this return.

The governor will also certify that the above officers and men were regularly organized, mustered in, and serving in the Naval Militia of the State on the 1st day of January, 1898, and are provided with uniforms of a naval pattern.

Upon the receipt of these returns the Secretary of the Navy will allot to each State a proportionate part of the sum of \$48,000, according to the ratio that the number of properly uniformed petty officers and enlisted men in each State bears to the total number returned by all the States, and the sum thus allotted will be placed to the credit of the respective States on the books of the Navy Department.

The following table shows the allotment made to each State, in conformity with the above regulations:

State.	Petty officers and enlisted men.	Allotment.	State.	Petty officers and enlisted men.	Allotment.
California	386	\$4,162.28	New York	472	\$5,694.98
Connecticut	165	1,781.78	North Carolina	239	2,483.69
Florida	198	2,602.55	Ohio	216	2,332.51
Georgia	225	2,429.70	Pennsylvania	216	2,332.51
Illinois	523	5,647.69	Rhode Island	139	1,483.82
Louisiana	282	2,829.25	South Carolina	152	1,641.39
Maryland	240	2,591.68	Virginia	44	475.14
Massachusetts	441	4,762.28	Total	4,445	\$4,699.69
Michigan	198	2,664.14			
New Jersey	364	3,939.71			

Florida and Virginia each reported a naval militia organization mustered in, and are included for the first time in the annual allotment. The District of Columbia has perfected an organization and will share in the next allotment.

A condensed résumé of the service performed by the Naval Militia during the war is as follows:

California.—The naval militia of this State at the outbreak of hostilities consisted of 37 officers and 527 men.

Of this number 13 officers and 80 men were mustered into the naval service, all of whom served on Auxiliary Naval Force vessels.

Connecticut.—The Naval Militia of this State furnished 15 officers and 188 men to the naval service.

Florida.—The Naval Militia of this State which, at the outbreak of hostilities, numbered 24 officers and about 200 men, supplied 6 officers and 93 men to the naval service. Of this number, 2 officers and 58 men served on Auxiliary Naval Force vessels, and 4 officers and 35 men served in the Coast Signal Service.

Illinois.—The Naval Militia of this State furnished 19 officers and 709 men to the naval service. All volunteered for the war and saw active service in every field of naval operations on the Cuban and Porto Rican coasts. The majority of this number were assigned as follows :

Vessel.	Officers.	Men.	Vessel.	Officers.	Men.
Indiana		17	New Orleans		3
Massachusetts		1	Lancaster	4	46
Oregon		60	Cincinnati		60
Puritan		6	Detroit		2
Newark		17	San Francisco		8
Amphitrite		2	Montgomery		20
Terror		9	Wilmington		13

Vessels.	Officers.	Men.	Vessels.	Officers.	Men.
Nashville.....		12	Hector		21
Annapolis.....		8	Suwanee		4
Vicksburg.....		8	Mangrove.....		1
Newport		26	Lebanon.....		3
Bancroft		6	Osceola.....		1
Fern	1	8	Wompatuck.....		5
Marietta		16	Maple.....		9
Cushing.....		8	Niagara.....		4
Foote ...		2	Hawk.....		2
Rodgers.....		1	Saturn		1
Winslow		2	Solace		1
Leyden.....	1	4	Viking.....		2
Franklin	1	18	Wasp		3
Dorothea.....		3	Peoria.....		1
Sterling	2		Resolute		2
Texas	1		Vulcan		1
Scorpion.....	1		Accomac		1
Yale.....		84	Tecumseh.....		1
Harvard.....		57	Siren.....	1	
Southery	1	9	Stranger	1	
Cassius.....	1	27	Kanawha.....	1	
Yankton	1	39	Alexander.....	1	

Louisiana.—The Naval Militia of this State furnished a total of 19 officers and 214 enlisted men to the Navy. In addition to this number about 200 men were recruited by the State authorities after the outbreak of hostilities, but were not taken into the regular service, enlistment in which had been stopped. Of the above number supplied to the service, 10 officers and 94 enlisted men were detailed to the U. S. S. *Passaic*, 7 officers and 97 men to the United States Auxiliary Naval Force and at the Pensacola Navy-Yard, and 2 officers and 23 men to the Coast Signal Service. Of this detail to the Pensacola Navy-Yard, 35 were sent to the receiving ship *Lancaster* at Key West and afterwards distributed to the ships of the North Atlantic fleet.

In addition to the above naval militiamen, 6 of the Louisiana battalion served in the Revenue Marine Service; 20 served on army transports, and 25 served in the various volunteer regiments recruited in the State of Louisiana; 3 enlisted in the Fifth United States Cavalry; 2 in the Eighteenth United States Infantry, and 2 in the volunteer artillery. These latter were men who failed to get into the naval service, but were anxious to serve their country in any capacity.

Maryland.—The Naval Militia of this State at the outbreak of the war consisted of 20 officers and 320 men, and its commanding officer was authorized by the governor to increase this number as occasion demanded. The total mustered into the United States naval service was 24 officers and 425 petty officers and enlisted men, who were assigned as follows:

Ship.	Officers.	Men.
U. S. S. Dixie.....	10	267
U. S. S. Apache.....	4	24
U. S. S. Ajax.....	2	55
U. S. S. Lancaster.....		25
U. S. S. Katabdin.....	3	.....
U. S. S. Dale.....	4	31
U. S. S. Restless.....		6
U. S. S. Elfrida.....		5
U. S. S. Minneapolis.....		11
Equipment Bureau.....	1	.....
U. S. S. Dolphin.....		1
Total.....	24	425

Massachusetts.—The Naval Militia of this State supplied 38 officers and 384 men to the naval service. Of this number, 7 officers and 138 men served on the U. S. S. *Prairie*; 20 officers and 246 men served on the Auxiliary Naval Force vessels *Minnesota*, *Lehigh*, *Catskill*, *Governor Russell*, *East Boston*, *Wyandotte*, *Inca*, and *Seminole*; and 2 officers and 36 men served in the Coast Signal Service.

After the outbreak of hostilities this organization was increased, in accordance with an act of the legislature of Massachusetts, by four divisions, each containing 3 officers and 55 men.

Michigan.—The Naval Militia of this State, which, at the beginning of the war, consisted of 18 officers and 175 men, furnished 11 officers and 270 men to the naval service, all of whom served on the U. S. S. *Yosemite*, many of this number having joined the organization after the commencement of hostilities.

New Jersey.—The Naval Militia of this State furnished 34 officers and 373 men to the naval service. Of this number, 20 officers and 261 petty officers and men served on the U. S. S. *Badger* and U. S. S. *Resolute*; 9 officers and 74 petty officers and men in the Auxiliary Naval Force on the U. S. S. *Montauk*; and 1 officer and 19 petty officers and men in the Coast Signal Service.

New York.—The Naval Militia of the State of New York furnished 49 officers and 805 petty officers and men to the United States naval service. The following statement will show, in detail, the disposal of this force :

1008 REPORT OF THE ASSISTANT SECRETARY OF THE NAVY.

Statement showing disposal of officers and men of the Naval Militia of New York who entered the United States Navy.

Organization.	Officers.	Men.
Staff of captain.....	3	.....
First Naval Battalion.....	10	267
First Separate Naval Division.....	1	16
Second Separate Naval Division.....	.....	7
Second Naval Battalion.....	.....	4
Total	14	294
Coast Signal Service.....	4	28
U. S. S. Yankee	8	265
U. S. S. Stranger	1	.....
U. S. S. Vermont	1	.....
U. S. S. St. Paul .....	.....	1
Total	14	294

Statement showing the manner in which the officers and men of the Naval Militia of New York who entered the United States Auxiliary Naval Force have been utilised.

Organization.	Officers.	Men.	Ordered to—	Officers.	Men.
Captain and staff.....	3	.....	Nahant	8	97
First Naval Battalion	10	93	Jason	8	86
Second Naval Battalion	20	350	Enquirer	2	32
First Separate Naval Division.....	.....	13	Huntress.....	.....	24
Second Separate Naval Division	2	55	Free Lance.....	2	17
			Restless.....	.....	25
			Sylvia	2	28
			Elfrida	1	20
			Aileen	1	28
			Franklin .....	.....	46
			Kanawha.....	1	25
			Coast Signal Service .....	.....	2
			Third District Auxilliary Naval Force.....	2	.....
			Washington Auxilliary Naval Force	1	.....
			Yaukee from New Hampshire.....	.....	17
			New Hampshire.....	7	66
Total.....	35	511	Total	35	511

North Carolina.—The Naval Militia of this State furnished 9 officers and 189 men to the naval service.

Pennsylvania.—The Naval Militia of this State at the outbreak of the war consisted of 19 officers and 252 petty officers and men.

Fifteen commissioned officers and 84 petty officers and men were mustered into the naval service. Two men from the ranks passed as officers and are included in the 15, but are not included in the 19.

The reason why such a small number of men entered the service was that the Government stopped enlisting after two of the three divisions

only had been examined, thus reducing the total examined by 4 commissioned officers and 84 petty officers and men. Two of the Philadelphia officers were unable to answer the call.

Out of the two Philadelphia divisions examined, 49 were rejected physically, 21 were rejected because of under age, and the difference of 14 men did not report for examination.

Those mustered into the service were as follows:

- One officer to command Auxiliary Naval Force, Fourth district.
- One officer to command the U. S. R. S. *St. Louis*.
- One officer to command the U. S. S. *Aileen*.
- One officer to command the U. S. S. *Minneapolis*.
- Two officers to command the U. S. S. *Viking*.
- Six officers and 58 men to the U. S. S. *Arctic*.
- Two officers to the U. S. S. *Huntress*.
- One officer to the U. S. S. *Sylph*.
- Twenty-one men to the Coast Signal Service.

Rhode Island.—The Naval Militia organization of this State consisted of 15 officers and 159 men at the outbreak of hostilities, of which number 8 officers and 147 men were mustered into the naval service, not including the commanding officer, who, being on the retired list of the Navy, was ordered to duty.

South Carolina.—At the outbreak of the war the Naval Militia of this State consisted of 21 officers and 302 men, which force was increased by 102 volunteers within ten days after hostilities commenced. Of this number, 18 officers, 6 mates, and 187 enlisted men were mustered into the naval service, and were distributed as follows:

Detailed for—	Commis- sioned officers.	Mates.	Enlisted men.
U. S. S. <i>Celtic</i>	6	.....	80
Naval batteries, Port Royal	5	.....	40
Coast Signal Service, Fourth district.....	3	.....	20
U. S. S. <i>Cheyenne</i>	1	.....	15
U. S. S. <i>Chickasaw</i>	1	.....	15
U. S. S. <i>Waban</i>	1	.....	15
Assistant, naval station, Port Royal.....	1	.....	.....
U. S. S. <i>Massasoit</i>.....	.....	1	.....
U. S. S. <i>Hercules</i>.....	.....	1	.....
Navy-yard, New York.....	.....	4	.....
U. S. S. <i>Merrill</i> .....	.....	.....	2
Total (in United States Navy, 211)	18	6	187

In addition to the above, this organization furnished 16 men to the United States Volunteer Army; the remaining 198 men were not called out, but remained ready to serve at any time.

Virginia.—The Naval Militia of this State furnished 2 officers and 62 men to the Navy, of which number 48 men were enlisted in the regular service, and 2 officers and 11 men did duty in the Coast Signal Service.

The drills, exercises, and courses of instruction of the Naval Militia, prior to the beginning of hostilities between the United States and Spain, were carried on by each organization as in previous years. During this interval the Department, with a view to preparing for possible emergencies, took steps to provide for utilizing the Naval Militia forces in the event of war. These steps and the results thereof are almost all contained in the reports on the operations of the United States Auxiliary Naval Force and the Coast Signal Service.

When war was declared the enlisted force of the Navy amounted to only 13,750 men and apprentices, and an immediate large increase of this number became necessary.

One of the most important questions since the inception of the "new Navy" has been that of the rapid mobilization of a sufficient effective enlisted force to man the increased number of vessels which would naturally be placed in commission at once. During the few years after the keels of the first four vessels of the new Navy, the *Chicago*, *Boston*, *Atlanta*, and *Dolphin*, were laid the attention of Congress was called to this subject and efforts made to authorize a volunteer national reserve. These efforts were fostered and encouraged by the Navy Department, but to no avail, nothing being done in this direction beyond the formation of State organizations, the principal training of which has since been in the line of preparation for the coast defense of the shores and harbors of individual States.

Although these organizations, many of whose members were recruited outside the seafaring class, failed to fully meet the requirements of the case, they were all upon which the General Government had to draw at the beginning of the war. A majority of these, through cooperation on the part of the governors of their States, answered the call of the Government, and were mustered into the service for duty on cruising ships, in the United States Auxiliary Naval Force, and in the Coast Signal Service. The Navy Department was hampered in its efforts at rapid mobilization by its lack of Federal jurisdiction over these organizations, but in the end succeeded in obtaining a force of over 4,000 officers and men.

Too much can not be said of the patriotism displayed by a majority of the members of these organizations, many of whom, although they had never been to sea before the mast, knew that they were to face not only the dangers of war, but hardships to which they had never been accustomed.

Of a total force of 24,123 enlisted men employed in the Navy during this war, 4,216 were mustered in from naval militia organizations, of which number about 2,600 served in the regular Navy, the remainder in the Auxiliary Naval Force and Coast Signal Service. As a rule, they had not been sufficiently trained in a practical knowledge of the modern implements of war, of the ship's organization, and the requirements of a sea life to make them of much actual value for some time after joining

a vessel; but, possessing a high average of education and intelligence, they picked up their duties quickly, especially in those cases where they were surrounded by trained men-of-war's men, and when the war ended were becoming quite efficient in their various grades and rates.

The experience of this short war has clearly demonstrated the imperative necessity for the maintenance of a national Naval Reserve, in the organization of which too much reliance must not be placed upon the merchant marine alone. This experience has shown that a considerable part of the merchant marine will be drawn into the service of the Army in transport duty, which, of course, materially reduces the class from which the Navy would hope to get its enlisted men.

The consideration of this subject from a practical standpoint leads to the belief that as many as possible of the classes in the United States which have to do with the sea, and with vessels and the appurtenances thereof, should be enrolled for a period of not less than five years in a United States Naval Reserve, and that in such classes should be included all graduates of the United States Naval Academy not on the active list, all ex-officers and former enlisted men of the United States Navy and Marine Corps, all officers and enlisted men of the Naval Militia now authorized by the laws of the various States who have seen service during the present war, all ex-officers and former enlisted men of the Revenue-Cutter, Life-Saving, Light-House, and Coast Signal Services; all graduates of State nautical schools; all masters, mates, engineers, pilots, and all officers and men serving in the merchant marine, with the owners, officers, and crews of yachts enrolled in any regularly incorporated yacht club, and all other persons whose principal occupation is on the high seas, sounds, bays, rivers, and other navigable waters of the United States, or in the construction and repair of marine engines, or in the construction and repair of electrical engines or the parts thereof.

These classes are more numerous than would at first appear. The numerous bays, sounds, and rivers on our coasts are bordered by many thousands of people who obtain their living thereon. In many localities it is believed that at those seasons of the year when work is the slackest it would not prove difficult to induce many of these classes to take an annual course of instruction and drill. It is also believed that this periodical association with the enlisted men of the Navy would induce frequent enlistments from this class of men when its members once realize the kindly treatment, the excellent fare, and the wholesome life led by our men-of-war's men.

In this manner a force of men who support themselves in civil life could be enrolled and properly trained for immediate service on the outbreak of war, at a comparatively small annual expense to the Government.

The principal difficulty in the inauguration of such a movement will be the matter of enrollment, due to the fact that the work of the Navy

is such at the present time that few regular officers can be spared for this purpose. It is believed, however, that the officers of the present naval militia organizations who served during the present war have gained sufficient practical experience to enable them to properly conduct this enrollment, which should preferably be by States, and should commence with those members of the present naval militia organizations who saw service during the present war and who wish to continue to wear the naval uniform. After enrollment the reserves should be organized in ship's companies under the direction of the Secretary of the Navy, who should from time to time detail an officer of the regular service to make the necessary inspections and reports.

A specified time, selected with reference to the period of slackest work, should be devoted by the ship's companies of each State annually to a period of instruction and drill of not less than two weeks' duration. In those States in which our navy-yards are situated the vessels there laid up in reserve could be used for this purpose, not only to the great advantage of the reserve, but also to that of the Government, enabling the Department officials to determine once each year the readiness of the reserve vessels for mobilization. In those States in which no navy-yards are situated a regular naval vessel could be detailed for this work without detriment to the Government service.

As an inducement to enter the Naval Reserve it is suggested that after passing an examination as to physical condition and nautical knowledge, each man should be supplied with a suit of clothing at Government expense, and that his expenses to and from the vessel upon which he is to take his annual course of instruction should be defrayed by the Government, and that while under such course of instruction he should receive the navy pay of the rating then held by him. The officers should be regularly commissioned in the Naval Reserve after an examination by a regular board of naval officers, under such conditions and for such period of service as may be prescribed by the President. The questions should be prepared by the regular examining board at Washington, and the examinations conducted by boards of officers appointed at the various navy-yards and elsewhere for that purpose. They should receive the navy pay of their grades while under the annual course of instruction and drill. The same regulations which govern the appointment of petty officers and the promotion of enlisted men in the regular naval service should obtain in the Reserve, and all laws pertaining to the regular navy personnel should apply to the officers and men of the Naval Reserve while actually under the annual course of drill and instruction prescribed by the Secretary of the Navy.

From information received from competent officers along parts of our coast line, it is believed that the above general scheme for the organization of a United States Naval Reserve, or something nearly akin to it, can be put into successful operation at an annual cost to the Government not exceeding \$40 per man.

All regulations pertaining to the organization, discipline, uniform, and duties of the Naval Reserve should be under the absolute control of the Secretary of the Navy. This would always permit the Secretary of the Navy to act in accordance with the requirements of the times, and, in time of war, to so subdivide the reserves as may be to the best interests of the Government.

Concerning the enrollment of the other nautical branches of the Government, it must be remembered that they now occupy positions which fit each one of them for one particular line of service in time of war.

The Revenue-Cutter Service, through the efforts of its present efficient head, is to-day prepared to act as an auxiliary to the Navy in any scheme of defense. Its vessels are armed and its officers and men organized, instructed, and drilled very much as in the naval service. In future wars this Service will perform its proper duties—those of a coast-guard navy—and be supplemented by an auxiliary coast-defense fleet.

That part of the Light-House Establishment which is afloat will become a part of the auxiliary coast-defense fleet, and that part which is shore keeping, together with the entire Life-Saving Service, will naturally and immediately take up the duties of a Coast Signal Service in connection with the Weather Bureau system. An annual course of instruction and drill for these services is a matter of easy accomplishment.

Upon the breaking out of war the entire Naval Reserve herein suggested would thus be immediately available for duty on regular naval vessels. If the number enrolled should be in excess of the requirements, the remainder could be utilized in coast defense.

If the Congress should authorize as herein recommended, the following general details are suggested in order to carry out the above scheme for the enrollment and organization of a United States Naval Reserve:

1. At the beginning of the next fiscal year those of the petty officers and enlisted men of the present naval militia organizations between the ages of 18 and 45 years who served in the Navy during the present war, and who may so elect, will be enrolled, under the direction of the Secretary of the Navy, in a United States Naval Reserve, in the same grades and rates held by them when mustered out of the naval service, without examination; provided, that anyone who has served as a warrant officer, mate, or chief petty officer may, if he so elect, stand an examination for the grade of ensign, and that any enlisted man or petty officer may stand an examination for the next higher rate.

2. The same privilege will be granted to each volunteer officer and one-year's man who served in the Navy during the late war, and to any naval officer or graduate of the United States Naval Academy who is not now on the active list of the Navy. The only exception to this privilege will be in cases of officers or men whose reports of fitness or discharges show them to be incompetent or undesirable.

3. The Secretary of the Navy will, if possible, detail a regular officer to conduct such enrollment in each State concerned.

4. Either a regular officer or the senior reserve line officer thus enrolled in each State will at once assume charge of the entire reserve force so enrolled in said State, and will organize it as one or more ship's companies, of such strength and after such manner as may be directed by the Secretary of the Navy.

5. As soon as this organization is perfected a general enrollment will be opened in each State to all able-bodied men, between the ages of 18 and 45, who are ex-officers and formerly enlisted men in the United States Navy or the Marine Corps, ex-officers and formerly enlisted men of the Naval Militia, authorized by the laws of the various States, who served in the Navy during the present war, ex-officers and formerly enlisted men of the United States Revenue Marine, United States Life-Saving Service, United States Light-House Service, and United States Coast Survey Service, graduates of State nautical school-ships, and all persons holding certificates as masters or mates, or as chief engineers or assistant engineers, or licenses as pilots, issued by duly authorized commissioners or boards of inspection, and serving in the merchant marine of the United States, and all other officers and men serving in said merchant marine, the owners, officers, and crews of yachts enrolled in any regularly incorporated yacht club, and every other person whose principal occupation is on the high seas, sounds, bays, rivers, and other navigable waters of the United States, or in the construction, repair, and rigging of vessels, or the construction and repair of marine engines or electric plants or parts thereof, provided that all such are citizens or naturalized citizens of the United States.

6. Said general enrollment shall be conducted in each State either by a naval reserve officer or a naval officer, at the discretion of the Navy Department, and shall be in the grades and ratings for which the applicants may be found qualified by a board of naval officers appointed by the Secretary of the Navy. All ex-officers of the Navy in good standing may be enrolled in the relative grades which they would have held had they remained in the naval service, provided they pass an examination therefor, and all graduates of the Naval Academy so enrolled shall be commissioned in the Naval Reserves with their respective classes at the Naval Academy according to the order of merit at graduation, and shall thereafter be examined, and, if found qualified, promoted with their Naval Academy classes in the same order.

7. The grades and ratings shall correspond to those existing in the United States Navy at the time, and the enrollment shall, for petty officers and enlisted men, be for a period of five years, provided that, excepting those holding higher commissions in the Navy during the war and ex-graduates of the United States Naval Academy, no officer shall be commissioned in the Naval Reserve to a grade higher than

that of lieutenant. Lieutenants (junior grade) and ensigns in the Naval Reserve will be entitled to stand an examination for promotion to the next higher grade after five years' continuous service, provided that all naval academy graduates senior to them in each of these grades shall become entitled to promotion.

8. All persons enrolled in the Naval Reserve, or who shall be honorably discharged at the end of five years' service, shall be exempt from service on land in the National Guard or militia.

9. The officers shall be duly commissioned in the Naval Reserve by the President, under such conditions and for such periods as he may prescribe, and shall be borne upon the Navy Register as United States Naval Reserves, and the petty officers and enlisted men thereof shall have stated on their enrollment papers their physical and professional ability, the length of their previous nautical service, their place and date of birth, and their occupation. They shall not be called into active service in time of peace, but shall perform such annual drills, exercises, or instructions as the Secretary of the Navy may direct, in which case they shall perform the same duties, have corresponding grades and ratings, be subject to the same laws, articles, rules, and regulations, and receive the same pay and allowances as the officers and men of the Navy; but no such pay and allowances shall be in excess of those for the period of duty actually performed by such officers and men. All the enrolled United States Naval Reserves may be called into active service by the President in time of war, or when the danger of war is imminent, and shall obey such call under the pain and penalty of desertion.

10. That the enrollment, organization, and classification of the United States Naval Reserves shall be under the direction of the Secretary of the Navy, who shall be authorized to detail officers and petty officers of the Navy to act as inspectors and instructors of the said United States Naval Reserve.

11. Promotions, discharges, and all assignments in the United States Naval Reserve shall be conducted under regulations established by the Secretary of the Navy, which shall accord, as nearly as possible, with those in operation in the Regular Navy.

12. The uniform shall be that of the Navy, with such exceptions, to indicate the character of the organization, as the Secretary of the Navy shall prescribe.

13. Officers shall provide their own uniforms, and each petty officer and enlisted man shall be supplied with one complete uniform of blue and one working suit, at Government expense.

14. A period of drill and instruction of not less than two weeks in each year shall be prescribed by the Secretary of the Navy. Such period for each ship's company will be selected at that season when work is slackest with the men of that particular locality. The expenses of officers and men to and from the drill ship will be defrayed by the

Government, and officers and men will receive the same rate of pay for the time under instruction as do corresponding grades and rates in the Navy.

15. Those ship's companies of the United States Naval Reserve which are located near to a navy-yard or naval station will have their annual drill on some vessel in reserve at said yard or station.

16. Other ship's companies will be annually drilled on vessels of the cruising class specially detailed for that purpose by the Secretary of the Navy. Where organizations are sufficiently self-supporting, vessels will, where practicable, be loaned to them for purposes of extra drill and instruction. The annual drills will be under the direction of regular officers, who will report on the general efficiency of each individual.

17. Any member of the United States Naval Reserve may, at his own request, upon reaching the age of 50 years, or after five years' continuous service, be reenrolled in what will be known as the Second Naval Reserve, in which he shall not be required to take the annual course of instruction and drill, unless he so elect, but shall be privileged to wear his uniform on occasions of public or private ceremony, and shall, in time of war, or when war is imminent, if the Second Reserves are called into active service, obey such call under the pain and penalty of desertion. And such Second Naval Reserves shall, when called into active service, receive the pay of their corresponding naval grades or rates.

Any commissioned officer of the United States Naval Reserve who is in command of an American merchant vessel or yacht may, while so commanding, fly a distinctive flag, to be known as the Naval Reserve flag, the color, shape, and size of which shall be prescribed by the Secretary of the Navy.

The Congress should provide that all laws which apply to officers, petty officers, and enlisted men of the Regular Navy should also apply to the officers, petty officers, and men of the United States Naval Reserves during the time that they are taking the annual course of instruction and drill prescribed by the Secretary of the Navy.

It will be advisable to restrict the general enrollment the first year to a limit which will come well within the appropriation.

It is believed that the benefit to the naval service and to the country from a measure such as is outlined above will soon become so apparent as to induce the Congress to grant a pecuniary reward for additional length of service in the Naval Reserve.

It is considered that a continuous annual appropriation of \$200,000 will be sufficient to provide for a force of Naval Reserves to aggregate 7,000 men at the end of three years.

Very respectfully,

W. H. H. SOUTHERLAND,
Lieutenant, United States Navy.

The ASSISTANT SECRETARY.

P A P E R S
ACCOMPANYING
THE REPORT OF THE SECRETARY OF THE NAVY.

**REPORT OF THE JUDGE ADOCAE-GENERAL OF THE
NAVY.**

**NAVY DEPARTMENT,
OFFICE OF THE JUDGE-ADVOCATE-GENERAL,
Washington, October 1, 1898.**

SIR: In compliance with the order of the Department, dated July 11 last, I have the honor to submit herewith a report of the operations of this office for the fiscal year ending June 30, 1898, together with the estimates for the ensuing fiscal year.

INCREASE OF BUSINESS.

While the existence of a state of war, actual or technical, since the 21st day of April last has undoubtedly operated to augment the business of this office, in common with that of other offices and bureaus of the Department, the constant and almost uniform increase which has been the subject of comment in previous reports was observed during the present year, before hostilities with Spain became imminent. In the month of January, 1897, 499 papers were received, while for January, 1898, the number was 648, an increase of 149.

It may be fairly assumed that the influence exercised by the prospect of war with Spain was very slight prior to February 15, 1898, the date on which the *Maine* was destroyed in the harbor of Havana. If this deduction is correct it indicates that the percentage of increase heretofore annually noted would in all probability have been found to continue during the present year, even if war had been avoided. This percentage is fairly exhibited by the following table, although the figures do not indicate the actual increase of business, changes in the methods of keeping the records having been made from time to time, which have resulted in reducing the number of separate entries:

Papers received calendar year—		Papers received calendar year—	
1887.....	2, 159	1893.....	5, 390
1888.....	4, 400	1894.....	5, 831
1889.....	4, 907	1895.....	5, 752
1890.....	4, 326	1896.....	6, 112
1891.....	5, 204	1897.....	6, 613
1892.....	5, 055		

In the calendar year 1898, up to September 29, the number of entries was 6,829, which, as will be seen, is in excess of the entire number for the whole of the calendar year 1897.

Reference is made to this growth of business in order to explain the absolute necessity which exists for strengthening the clerical force of

the office. While the work actually disposed of annually has more than quadrupled during the past eleven years, the clerical force of the Judge-Advocate-General's Office has been increased but slightly in the same time. A proportionate increase is not now requested, but an estimate has been submitted for one additional law and contract clerk, at \$1,600. The services of such a clerk are now imperatively required. An estimate of this character was last year submitted by this office and forwarded with the approval of the Department, but the item was not favorably reported by the committees, as was understood, because it was determined that no increase of force whatever would be allowed in any branch of the public service. The time has, however, now arrived when the necessities of the office in this respect can not be too strongly urged, and the request is accordingly resubmitted in the earnest hope that it will be granted.

In explanation of the fact that it has been practicable to carry on the work of this office heretofore with an inconsiderable increase of force, it may not be improper to state that this result has been accomplished solely by the rigid application of what are known as "civil-service" principles, according to which incompetent clerks have been gradually eliminated and efficient and worthy men retained and promoted as they have become more expert and have more fully mastered the details of the business intrusted to them. Competent men engaged upon the same general character of work for a number of years naturally become exceedingly proficient, and are able to dispatch accurately and well a much greater volume of business as the advantages growing out of experience and familiarity with particular lines of work are developed. But, while it is obvious that a body of men offered the premiums of promotion and advancement for efficiency, and subject to the penalties of reduction or dismissal should they prove careless, negligent, or incompetent, will, in the course of a few years' training, reach a high standard of working power, it is equally apparent that the limit of their capacity for improvement will finally be reached, and when this occurs an increase of work can be met only by an increase of force.

I believe that an examination of the present and past condition of the business of the office, as shown by its records, during my period of service as Judge-Advocate-General, will demonstrate that the work can not be satisfactorily carried on without the allowance of at least one additional law and contract clerk, and such clerk should be one whose services can not be had or retained for less than \$1,600 per year. The experiment of appointing capable men at lower salaries, with prospects of advancement more or less uncertain, has been tried, with the result that in more than one instance valuable clerks have been lost to the office, after a period of training, through the acceptance of more favorable offers elsewhere.

* * * * *

PRIZE.

The claims of officers and men of the Navy for prize money growing out of the operations of the war with Spain, so far as received, are now being examined, and when found to be in due form, are transmitted to the Auditor at once in cases where the properties to which they relate have been condemned as prize, without waiting for the determination of the various questions which may be embraced in the final decrees of the courts. This action was decided upon after consultation with the Auditor for the Navy Department in order that no unnecessary delay

should occur in the Departmental examination of these claims. It is proper to add, however, that no distribution of prize money accruing from the condemnation of any captured vessel, cargo, or other prize property, can be made until a decree of a court is had determining, first, that the property involved is "lawful prize of war;" second, the net amount to be distributed; third, the vessels entitled to share in the distribution; and fourth, the question of the relative strength of the forces engaged at the time of capture. These are all matters for judicial determination, and the executive branch of the Government can take no final action in the distribution of prize money until such questions are decided by decrees of the courts. The necessary steps have been taken to secure prompt information respecting final decrees as they are rendered in the United States district courts where prize proceedings are pending.

Section 4635 of the Revised Statutes provides that—

A bounty shall be paid by the United States for each person on board any ship or vessel of war belonging to an enemy at the commencement of an engagement, which is sunk or otherwise destroyed in such engagement by any ship or vessel belonging to the United States, or which it may be necessary to destroy in consequence of injuries sustained in action, of one hundred dollars if the enemy's vessel was of inferior force, and of two hundred dollars if of equal or superior force, to be divided among the officers and crew in the same manner as prize money.

In an opinion rendered by the Attorney-General September 2, 1898, the conclusion is reached that "the questions of fact involved as to the status of the vessels destroyed, and whether they were of superior, equal, or inferior force to our naval vessels engaged, and as to which of our naval vessels were engaged, should be adjudicated by the proper court or courts," rather than by the Navy Department; and that the proceedings necessary to such adjudication may be instituted "under a libel of information in a district court of the United States sitting as a prize court (which would include the Supreme Court of the District of Columbia"), or the proceedings may be brought "by transmittal or submission of the case to the Court of Claims." It is assumed that the Department will concur in these views, and that accordingly proceedings will in due course be instituted for the determination of the questions of fact which are requisite to the adjustment of claims for bounty under section 4635 of the Revised Statutes.

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SAM. C. LEMLY,
Judge-Advocate-General.

The SECRETARY OF THE NAVY.

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REPORT OF BOARD ON SELECTION OF SITES FOR COAL- ING STATIONS.

BOSTON, MASS., August 16, 1898.

SIR: Conformably to the Department's orders numbered 117396 and 120727, under dates of June 7 and 25, 1898, respectively, hereto attached, marked A, the board appointed "for the purpose of examining into the question of and recommending the location for coaling depots at the different navy-yards and stations not already provided with the same" now has the honor to submit its report.

The president of the board having put himself in communication, by letter, with the Chief of Bureau of Equipment, Navy Department, pur-

suant to paragraph 3 of orders No. 117396, assembled the board at Boston, Mass., on the 16th of June, 1898, and began its work.

The first point visited was the navy-yard at Boston, Mass. This yard, located at the head of a deep and well-fortified harbor, and in the center of a large manufacturing and commercial population, presents many advantages of site, of railway communication, ready supply of material of every sort, and limitless skilled labor to draw upon. Such advantages would seem to suggest the wisdom of its fullest development into a dock, building and equipping yard of latest improved plant and best appliances for economical and efficient working as a great public workshop. But it is submitted that such national establishment will not be complete until equipped with the most approved receptacles and appliances for the receipt and handling and the storage and delivery of coal, whether pertaining to ships or to yard furnaces and workshops.

The present coal sheds at this yard are located at its extreme western end, adjacent to the ocean freight wharves of the Fitchburg Railroad. The best water along the water front is to be had there, and such location for coal storage could not be bettered. The board, therefore, recommends the erection of coal pockets and machinery on that site, so arranged that ships can be moored to a wharf and take coal directly from the coal pockets, and also if necessary from lighters on the other side of the ship at the same time. This would require the construction of a slip of sufficient dimensions to admit a battle ship for coaling from coal pockets on the wharf, either at the side or at the end of the slip.

The Fitchburg Railroad and the Commonwealth of Massachusetts, as largest owners of Fitchburg Railroad stock, desire, as shown by the correspondence marked Appendix B and map marked Appendix C, to have the Navy Department confirm this site for a coal pocket and construct a slip of such width and length as will enable the railroad company to use one side of the slip while the ships of the Government use the other side. This proposition demands, if carried out, the relinquishment of the use of some portion of the area of the navy-yard, but in consideration of such relinquishment Mr. E. D. Codman, president of the Fitchburg Railroad Company, in a letter addressed to the board, under date of July 30, 1898, hereto appended, marked D, states:

If the United States Government grants to the Fitchburg Railroad the right to use the adjoining half of the proposed dock along the Fitchburg Railroad property of Charlestown, the railroad company will agree to contribute to the area of said dock a strip of land 20 feet wide, extending the full length thereof; will build a pier on its own site for its own use; will build a concrete or masonry wall at the head of said dock the full width thereof, and excavate the whole area to a depth of 30 feet below mean low water. Said dock will be 160 feet wide and about 570 feet long.

In view of such proposition, the board is of the opinion that the plan proposed would be of mutual benefit to the United States and to the Commonwealth of Massachusetts, as well as an advantage to the Fitchburg Railroad and to the commerce of this the second commercial port in importance of the United States. The board, while recommending the adoption of such proposed measure, is of the opinion that the Commonwealth should release to the General Government the title of its lands in front of the navy-yard between the present shore line and the new line to be determined upon by the Navy Department. The board, in its investigation of the whole matter, has consulted freely with the harbor commissioners of the State of Massachusetts, as well as Mr. J. R. Leeson, chairman of the railroad commission of the Commonwealth. Those officials have been much interested in the proposed improvement, and

will recommend to the general court of the State such legislation as may be necessary on the part of the Commonwealth to secure the favorable action of the Government of the United States.

The benefit from such extension of the water front, thus increasing the area of the navy-yard, would accrue not only to the General Government, but also to the Commonwealth of Massachusetts, in making it possible to develop more perfectly the yard in varied directions, and furnish highly paid employment to an increased number of residents of the Commonwealth.

In view of the foregoing considerations and conclusions, the board recommends that a slip 550 feet long and 180 feet wide be constructed at the point indicated—i. e., the western end of the yard, adjacent to the property of the Fitchburg Railroad Company—and that coal handling machinery and pockets to hold 15,000 tons be built on the east side of the slip. This, from its several personal examinations of the site and its surroundings, the board believes to be entirely feasible.

In the event of the adoption of these recommendations, it is suggested that, in the interest of all parties concerned, the Fitchburg Railroad Company be given a perpetual lease to the use of 80 feet of the western side of the slip, on condition that said railroad bears all expense of dredging the slip and the Commonwealth will release to the United States all title to and rights and interest in land now included between the present water front of the navy-yard and a new line to be determined upon and defined by the joint action of the Navy and War Departments and harbor and land commissioners of the Commonwealth of Massachusetts.

In its several visits to the yard the board noticed that large quantities of coal were being unloaded from colliers and carted to different parts of the yard at considerable distances from the water front and piled in the open air. Such incident of dockyard procedure was evidently unavoidable, because of the fact that the present coal shed where it is proposed to erect coal pockets, with appropriate handling machinery, was already full, but it suggested double labor in the handling of the coal before it reached its ultimate destination of ship or shore furnaces, together with the increased expense attendant upon such crude, old-time method.

PORTSMOUTH, N. H.

Having completed its examination of the facilities of the Boston Navy-Yard for the establishment of a coaling plant adequate to the naval necessities of this day, the board proceeded to Portsmouth, N. H.

The navy-yard at that point, really located at Kittery, Me., across the Piscataqua River from Portsmouth, possesses the advantage of open water at all seasons of the year, deep water front, readily accessible at all times, a healthy and invigorating climate, ample territory to meet any expansion of plant that future naval needs may require, and an unquestionable resource of labor—skilled and unskilled—to meet any emergencies that may arise. Such advantages, together with the fact that the importance of that yard is soon to be enhanced by the construction of a dry dock suitable for the docking of our heaviest ships of war, would seem to make the establishment of coaling facilities there of the most improved sort a necessity, to round out the usefulness of the yard and make it an important place of dockage, repair, and supply, especially in time of war.

During the present summer, as at the Boston yard, several thousand tons of coal have been delivered at that yard and stored in differen-

places to meet the demands of war, some adjacent to the water front and other some 800 feet from the water front.

The cost of handling and transporting this coal makes the best argument conceivable for the construction of coal-handling machinery and pockets at our navy-yards and other points along the northeastern coast; for, while the newest appliances handle coal for from 1 to 3 cents per ton, it has cost 55 cents to unload the coal adjacent to the water front at the yard in question and 78 cents per ton to unload and pile the coal 800 feet away.

The fact that at this yard there are five old decayed coal sheds, partially filled with coal, which are thought not worth repairing—all remote from the boiler plants where the coal is to be used—illustrates the waste and extravagant cost of coal storage and handling which has obtained at navy-yards and stations up to this time, whether as regards the use of coal in workshops or on shipboard.

The wharf at this yard, between the present floating dry dock and the boat landing, has always been used for the main coal pile. The space is ample and the depth of water sufficient for the permanent erection of coal pockets capable of storing 10,000 tons of coal, together with the necessary coal-handling machinery, on that site. The board recommends the establishment of such plant, and to be so arranged that coal, whether for ship supply or yard workshop uses, can be readily conveyed and delivered.

For such purpose this yard, as well as all other yards and stations, would need a proper system of railroad tracks for the ready and economical distribution of coal to whatever points required, whether at the water front for ships or elsewhere for yard furnaces.

NEWPORT, R. I.

The next point visited by the board was Newport, R. I., in the harbor of which are located the United States Naval Training Station and War College, on Coasters Harbor Island, and the Naval Torpedo Station, on Goat Island.

A careful examination of the topographical features of those islands and lines of soundings run to determine the depth of the waters washing them showed one point on each island where piers could be readily built for the location of a coaling plant. First, on the northwestern side on the northern end of Coasters Harbor Island a pier some 200 or 300 feet in length would be sufficient to reach a depth of 5 fathoms at low water. But it is feared that coal pockets located at that point would interfere with the target ranges which have been established there for the practice of the apprentices of the Naval Training Station. Second, from the upper end of the breakwater running northward from Goat Island up to the light-house built at its extremity a pier might be built out in a northwesterly direction some 800 or 900 feet to the 5-fathom line, upon which suitable coal pockets might be erected. A coal pocket at that point, however, might impair the usefulness of the light-house to the navigator in those waters, and the building of the pier would be at considerable cost. The piers also would, from their locations, be exposed to the damaging effects of the strong northwesterly gales that frequently sweep over the bay. On the other hand, it is pertinent to note the fact that the dealers in Newport seldom carry in stock more than 500 tons of coal at a time, so that in stresses of emergency no ship of war can count upon filling up its bunkers there.

Yet, in view of the fact that Congress has recently voted a large sum

of money for the establishment of a great coaling station at New London, Conn., only a few hours' run from Newport, the board does not recommend the erection of a coaling plant at the latter place, unless in the form of a coal hulk, fitted with proper machinery and appliances, and moored at a safe and convenient point in the bay. The partially sheltered bay of Jamestown, at Conanicut Island, is suggested for such purpose.

NEW LONDON, CONN.

The board, having completed its duties at Newport, proceeded to the naval station at New London, Conn. That station, situated on the east bank of the Thames River, about $4\frac{1}{2}$ miles from its mouth, and also having a branch of the Vermont Central Railroad running through its territory, offers great advantages as the site of a large Government coal depot. The grounds are extensive, the water front ample for all purposes of wharfage, and the depth of water sufficient, with little dredging, for ships of heaviest draft to come alongside the piers it is proposed to build there.

As at its last session Congress appropriated a large sum of money for the establishment of a large coal depot at this station, it only remains for the board to express the opinion that no other equally good site could have been found between Boston and New York for such purpose of coal storage and supply.

The board recommends that the coal pockets to be erected there may have a capacity of not less than 25,000 tons.

The fresh water at the station is furnished by wells, one of which near the storehouse there can be connected with a small steam pump and the water pipe of the wharf; but the supply is very limited.

NEW YORK, N. Y.

The navy-yard at this point may be regarded as the most important naval establishment the country possesses on the Atlantic coast. Located at the great financial and commercial metropolis of the Union, it has ready command of all that such chief mart affords, whether as to labor supply or of the material of whatever character that enters into naval or commercial uses. A national establishment of such commanding advantage should have every form of plant and equipment necessary for its most complete development and highest usefulness. To meet such conditions it should have constructions of a proper capacity for the storage of such supplies and materials as are constantly required for the building, repairing, and equipping of ships.

Among such essential constructions would seem to be coal pockets of large capacity, most improved character, and best handling machinery for the storage of coal and its expeditious transport from collier to pocket, and from pocket to ship, especially on occasions of urgent demand.

The board found in its examination that the coal shed, capable of holding from 4,000 to 6,000 tons, at the northern point of the yard, close to the water front, had been dismantled and turned into a storehouse for other material; and that the recent practice of coaling ships at the navy-yard or at other points in the harbor of New York has been from lighters or barges sent directly alongside the vessels from the stores of the dealers or contractors.

Such system, in so far as it pertains to the putting of coal alongside the ships to be supplied, is said to have been fairly expeditious, but it

involves the same old, crude method of delivering coal into the bunkers that has ever made coaling ship a tedious and time-consuming process.

In this connection it is submitted that in every factor or incident of naval routine, methods, and appliances, constant improvement and advance has been made during the past thirty years, save in the methods of coaling ship; and as coal is the life and soul of the modern ship, without which no man-of-war of this day—whatever her readiness and efficiency in every other respect—can weigh an anchor, make for an enemy, or fire a gun, it would seem that no effort should be spared, no means neglected, toward the improvement of plant and appliances for the more rapid delivery of coal into ships' bunkers than now obtains. The experience of the present war has shown the vital necessity of improved facilities on this head; nor is it too much to say that the delay of a few hours in the coaling of the fleet might have resulted in irreparable disaster to the nation.

Wherefore, while the Government can doubtless be well assured of being able to obtain supplies of coal at this great market of New York at any and all times, the board recommends that for emergent uses and the economic and speedy handling and storage of coal the erection, near the waters of Whitney Basin and East River, near the north angle of said basin, coal pockets of a capacity of not less than 5,000 tons and a coal tower to handle 100 tons per hour, together with railway tracks radiating from such point to different sections of the water front and to the various boiler plants in the yard.

There is an ample supply of pure water at this yard. The facilities for piping it on board ship are good.

LEAGUE ISLAND, PA.

This yard, situated on the west bank of the Delaware, just below Philadelphia, and close to one of the best coal and iron markets in the country, is still, in a large degree, in an undeveloped state; but many improvements, including a new dry dock of great capacity, are contemplated, and many changes may be made in the water front in consequence thereof; and while the board does not venture to indicate with positiveness any particular location for coal pockets, it recommends the erection of a coal tower and pockets on some one of the piers in contemplation—probably the one near the proposed new dock about to be built—the pockets to have a capacity of from 2,000 to 5,000 tons, with appropriate coal-handling machinery for quick and effective working, and connected by tracks with all working parts of the yard and every available part of the water front. It is believed that 30 feet of water at low tide can be easily had at the end of the pier for such purpose.

The supply of fresh water at League Island is ample for all purposes.

WASHINGTON, D. C.

The yard at this point having been turned almost exclusively into an ordnance factory, there is very little if any call for coal for ships; but a trestle and pockets for 1,000 tons of coal, with tracks for its proper distribution to the different workshops by means of dump cars would be an improvement to the yard, both on lines of economy and facility. Such improvement is recommended.

NORFOLK, VA.

The yard at this point, located on deep water on the east bank of the Elizabeth River, remote from the attack of a maritime enemy, and possessing every advantage of climate and ready facilities for the supply of material by rail and steamship, and abundant labor, is one of the most important naval bases of the country.

When the improvements now being made in the channel below the site of Norfolk are completed, there will be 30 feet of water from the sea to the Norfolk yard, so that the largest ships of war can go up to the yard wharves.

Other plans for improvement contemplate the purchase of land which extends from the south boundary of the yard to the right of way of the new Belt Line Railway, and the construction of a large fresh-water basin on this area. If this is accomplished, the extreme southeast corner of the new property would be an excellent site for a large coal-storage plant. The coal could be landed in pockets, from cars run on a trestle over the pockets, and delivered to ships lying either in the river or the fresh-water basin.

But it is recommended that coal pockets for 5,000 tons be erected on the site of the present coal shed, and that a tower be erected on the adjacent wharf; that all coal used in the yard be stored here, and distributed to all points as needed, by dump cars.

The water to be had at this yard is either from driven wells in the yard or from the lake which supplies the water used in Portsmouth, Va. The former is not of good quality, and should not be issued to ships for steam purposes, nor in fact be used in the stationary steam boilers of the navy-yard. The lake water, which constitutes Portsmouth's supply, is of much better quality, but does not equal water which is obtained by artesian wells in Berkeley, on the opposite side of the river. The Berkeley water is generally issued to ships, and is conveyed in steam water boats.

PORT ROYAL, S. C.

The naval station at Port Royal, being the only one between the Chesapeake and Key West, should be made an important coal depot.

In view of the short life of timber structures in the waters of Port Royal Bay and Harbor, owing to the destructive work of the torado worm, it is necessary to make use of masonry or metal in all piers erected there, which makes the cost of such structures very great.

The prevailing winds at Port Royal are from the south. It seems, therefore, undesirable to locate a coal plant, with its attendant dust, south of the shops and dock.

The land now being acquired north of the area already occupied by the station affords the best location for a coal plant. Wherefore, the board is of the opinion that a coal plant, with a masonry quay about 300 feet long and 200 feet wide, should be located there, and that pockets for 15,000 tons of coal, with the necessary machinery for its handling, should be placed on the pier.

Another advantage this site affords is that it is just at the southern end of the deep basin at the yard front, and the dredging necessary to make berths for a ship alongside would be less than at any other place.

Port Royal is the terminus of a railroad which located a coal-shipping depot at this point, but the structures were all of wood, and it

became necessary to abandon them about two years after they were built.

If necessary the railroad could be extended by means of a bridge across Battery Creek and about 4 miles of not very heavy work to reach the naval station.

PLACES NOT NAVAL STATIONS.

Having visited the yards and stations embraced within the Department's first instructions, the board proceeded to visit the ports suggested in the communication of the chief of Bureau of Equipment, addressed to the board under date of June 13, 1898.

PORTLAND, ME.

The first place visited was Portland, Me. This important seaport is built upon a promontory, 4 miles back from the ocean, between Fore River and Back Cove. It is protected by high land on Cape Elizabeth and on Cushing and Peaks islands, but is somewhat exposed to attack from seaward by a maritime enemy using the powerful and long-range ordnance of this day.

The upper harbor, which gives on Fore River, has its best water on the north or Portland side. The whole of this front is occupied by wharves for commercial purposes, while the other side has few improvements, on account of shoals on that side of the river.

Portland is the chief coaling center for the Maine coast, and the three largest coal dealers, Messrs. Randall & McAllister, Sargent, Denison & Co., and A. R. Wright, handle hundreds of thousands of tons per annum. The board in pursuit of its inquiries visited the firm of Randall & McAllister, reputed to be the largest dealers of coal in the city, and which now has a contract with the Bureau of Equipment for supplying coal to our men-of-war calling at Portland. That firm alone, the board was assured, handled 382,000 tons of coal last year, and always carries in stock from 6,000 to 8,000 tons of high-grade bituminous coal.

The coal is principally brought to Portland from the mines by sea, but in time of war it can readily be brought by rail. One of the trustees of this firm invited the board to look at the wharves and plant of the firm, which were found to be of modern construction and of great capacity. The system of discharging coal from colliers into coal pockets and its transference again to lighters for the coaling of ships in the harbor is very good, but it lacks the chutes for shooting coal directly from the pockets into vessels that may come to the wharves. At present hardly more than 20 feet of water can be had at the end of any wharf in the city at low tide. Consequently our ships of war, especially those of heavy draft, are obliged to coal from lighters or barges sent alongside. But Harbor Commissioner Samuel B. Kelsey informed the board that the harbor is now being dredged to a depth of 30 feet. He also said that there was no unimproved property on the city side of the harbor which could be bought for coal storage by the Government, although improved water front might be had at large cost.

When the ships of the North Atlantic fleet called at Portland in the summer of 1897, their requisitions for coal were filled by the contractor, he said, as promptly as could be desired. He also supplied fresh water to the ships by means of water barges in an equally satisfactory manner. The water supply of Portland comes from Lake Sebago, and is of purest quality.

In view of the fact that Portland is but a little more than 100 miles from the navy-yard at Kittery, Me., where it is proposed to establish coal pockets and carry a large supply of coal for naval use, and the further fact that the local dealers of Portland are able to furnish at least 5,000 tons of coal on demand at any moment, the board does not recommend the establishing of a Government plant for coal storage at that port.

ROCKLAND, ME.

The city of Rockland is located on a small bay opening into the western part of the Penobscot Bay, near the ocean, and is easy of access.

At low tide the water near the wharves is quite shoal—in places it is not over 4 feet. Vessels drawing 20 feet can get no nearer than the fifth of a mile to the outermost wharf. In the outer part of the harbor there is ample depth. It ranges from 5 fathoms to 10 fathoms at low water.

The board, upon its arrival at Rockland, called upon Hon. A. W. Butler, mayor of the city, and Frederick R. Spear, esq., the largest coal dealer in the place. Those gentlemen put their carriages at the use and convenience of the board and accompanied it in its investigation of the coaling and watering facilities offered there, as well as in its inspection of the sites which might be suitable for coal depots for the Government.

The usual supply of coal in Rockland is scant. Mr. Spear, the largest dealer, carries but from 200 to 500 tons, which is practically the stock available for vessels calling there.

The Government of the United States is spending a large sum of money for the improvement of Rockland Harbor, among which improvements are the removal of ledges, dredging near the wharves, and the construction of a substantial breakwater running due south from Jameson's Point and on a line $1\frac{1}{2}$ miles east of the city.

This breakwater, which extends about 700 feet beyond the 5-fathom line, already protects an area of about one-half mile square in which the minimum depth of water is 24 feet. When the breakwater is completed another area of almost equal extent will be protected from the strong northeasterly gales and heavy seas which frequently prevail there. The minimum depth of this outer area so protected would be about 30 feet and the maximum depth about 52 feet. This protection will afford safe anchorage for ships of every class.

It was suggested that tracks might be run along the top of this breakwater, and that a short coal pier and pockets might be built near the inner end, which would permit ships of war of the heaviest draft to go alongside for coaling purposes. The board has no doubt of the feasibility of this plan; but to carry out this project would require considerable heavy grading and the raising of the top of the breakwater about 10 or 12 feet. This would be very expensive. It would probably cost more than \$100,000.

Owl's Head, at the entrance of the harbor, on the south side, forms a small bay, protected from the east to the southwest against the prevailing winds and sea, which has at least 30 feet of water near the shore that can be reached by extending a wharf which now juts a few feet from the shore to a depth of about 18 feet of water.

A wharf having a frontage of 400 feet on the 5-fathom line could be built of crib work resting on a rock foundation, and the edge running north and south would not be over 200 feet from the present shore line.

A serious objection to locating a coal depot at Owl's Head, or on the

inner side of the breakwater, is the distance from the terminus of the Maine Central Railroad at Rockland, which would require an expensive railroad to be built to connect the track of the railroad with the coal depot.

Another serious objection is the ease with which a railroad could be cut at several points between Brunswick and Rockland—such as at Bath and Wiscasset.

Still another objection, which applies equally to Rockland and Eastport, is the lack of proper defense and the difficulty of providing suitable defensive works.

In view of the above obstacles to the establishment of a convenient coaling depot at Rockland, the board is of the opinion that it would not be advisable to select this locality for a Government coal depot.

EASTPORT, ME.

This city is built upon the southeast end of Moose Island, in the northeasternmost waters of the United States. It has one of the finest harbors in the country, a good depth of water, bold shores, and excellent holding ground.

Immediately upon the arrival of the board there, Gen. S. D. Leavitt, mayor of the city, accompanied by Mr. H. C. Bucknam and Mr. J. D. McLaren, called upon its members and tendered their services in aid of any examination it was desired to make. Mayor Leavitt also furnished a tug, by which the entire party was conveyed back and forth along the shores of the island, and thus the board was given an excellent opportunity to examine the different points where a coal depot might be located.

Practically the entire water front of Eastport is occupied by wharves and sardine factories, but the Government could doubtless readily secure a site, 400 or 500 feet in frontage, on deep water on the northern end of the city's water front.

Wharves 600 feet long, between the street line and the 5-fathom line, could be built upon such property by means of cribs placed on shelves of rock from 6 to 10 feet below the water level.

This property at the northern end so outlined lies at the north end of the front of the city, while the terminal of the new railroad to Eastport lies at the southern end of the water front, and it would be difficult and expensive to continue the railroad to the site just described.

Another improved wharf which lies nearer the railroad terminal is probably available, but there is not sufficient frontage to make it advantageous for a coal depot for the use of the Navy.

Shackford's Cove, which lies southwest of the city, about 500 feet in width and 700 feet long, has very shoal water at low tide. Just off the line joining the points the water is very good, having at least 5 fathoms at low tide.

Mr. Hiram Blanchard, who owns property surrounding this cove, described its natural features, and also the waters off the eastern point. He also pointed out the location of an old wharf which formerly stood just off the point, but which has been carried away down to a point below the water level.

The property on this point, having a frontage of about 400 feet on the 5-fathom line and a water frontage of 600 feet at right angles of the same, could be had by the Government, it is believed, at a moderate price. Being removed from the crowded water front, it could doubtless be purchased for less money than the tract described at the northern

end of the city's frontage. It also offers an important advantage in being so located that a branch of the new Washington County Railroad can be easily and cheaply constructed to connect the railroad and the coal depot.

This last-mentioned item is regarded as of great importance, not because coal would be ordinarily transported by rail to the depot, but for the reason that in time of war between this country and another having a powerful navy, water transportation would be difficult, unsafe, and expensive. It is needless to add that this would be just the time when it would be most essential to keep the coal stores at a maximum, even if the railroad transportation should be so high as to be almost prohibitive under the normal conditions of peace.

Broad Cove, to the west of Shackford's Cove, is a fine, broad indentation, with bold water close up to parts of its shores. It makes an excellent anchorage, and ships of the Navy have often anchored there. This cove offers advantages similar to those to be found at Shackford's Cove, but it would necessitate a longer railroad to connect the Washington County Railroad with a coal station located on this cove.

Campobello Island, which is British territory, lies east of and near Moose Island, forming a narrow channel, which is very shoal at low water, but which has a good depth of water at high tide, as the rise and fall in that locality is very great—not less, indeed, than 18 feet.

When under certain conditions of tide this channel can not be used, vessels have to take the channel between Campobello and Deer islands, which adds about 13 nautical miles to the distance between Eastport and other Maine ports. But, besides being longer, this route runs 4 or 5 miles through waters under exclusive British jurisdiction.

And while the board is of the opinion that Eastport, from its geographical position and fine harbor, possesses many advantages for the site of a naval coaling depot, it hesitates to recommend its establishment there owing to its proximity to British territory, the great drawback of frequent and prolonged fogs which set in there, together with the fact that the sailing distance from that port to points eastward of the northeastern Atlantic coasts is not materially less than from harbors farther west, whose waters lie wholly within the territory of the United States, and which have equal, if not superior, rail and water facilities.

FRENCHMAN'S BAY.

Although the board had no instructions or suggestion to visit Frenchman's Bay, about 90 miles west of Eastport and some 55 miles east of Rockland, it concluded to do so on its way back from Eastport to Boston, especially as the senior member could command the use of the Massachusetts nautical training ship *Enterprise* for such purpose at that port.

Having arrived at Bar Harbor, on Mount Desert Island, which forms a part of the western shores of Frenchman's Bay, the board proceeded in the steam cutter of the *Enterprise* to examine the shores and waters at and adjacent to Mount Desert Ferry in Sullivan Harbor at the head of the bay, and the terminal of the Maine Central Railroad.

Such examination seemed to show conclusively that the railroad and ferry wharf occupies the best site for a coal depot in all that locality, but the railroad officials whom the board met suggested that a pier and coal pockets could be readily extended from the wharf without injury—perhaps to the advantage—of the railroad and ferry interests at that point.

The fresh-water system of the railroad at that terminal is unfailing, and the defense of that site would rest upon batteries already established or in contemplation at the lower part of the bay.

Coal for the railroad, bay steamers, and inland purposes is now landed there from the mines by water carriage, but in the event of war with a strong maritime nation it could be readily supplied by rail over routes which would be practically secure from the attacks of an enemy's fleet, a fact that strongly impressed itself upon the minds of the board.

It has been stated that ice sometimes obstructs navigation in that part of the bay, but from inquiries made by the board from various persons it would seem that such occasions are exceptional, and would apply equally to the waters of Boston and New York harbors and Chesapeake Bay.

The distance of Mount Desert Ferry from Bar Harbor is about 8 miles. The channel is deep and clear, as a glance on the chart will show.

When about ready to send in its report, the board received special instructions from the Department (hereto appended, marked E) to examine and report upon the advantages of Long Porcupine Island, in Frenchman's Bay, as a coaling depot.

Long Porcupine is situated a nautical mile and a half east of Bar Harbor and some $5\frac{1}{2}$ miles south of Mount Desert Ferry. To the southeast of it, about a mile away, lies Iron Bound Island, and equally distant to the southwest is Round Porcupine. Both these islands are high and rocky, upon which effective defensive works could be erected.

Immediately upon arrival at Bar Harbor the board put itself in communication with Mr. Thomas Moran, the agent representing the owners of Long Porcupine, and with whom some correspondence had been had. He at once put a naphtha launch at the use of the board, and, together with Mr. Greely, of Ellsworth, accompanied it to point out the general features of the island and to give such other information as the board might seek.

The entire shores of the island were skirted, and soundings taken at various points of the circuit. This occupied the better part of the afternoon of the day.

The next day, as soon as the state of the weather would permit, the board again visited the island and examined it for springs and surface water. For such purpose the naphtha boat was furnished by Mr. Moran, as before.

Careful examination of the parts of the island where springs were said to exist failed to show indications of any considerable promise of water there. Two small springs were found, but it was apparent that their flow was not of sufficient volume to meet the demands that a coal depot would necessarily make upon them. The character of the foundation rock of the island also indicates that artesian wells would probably have to be quite deep and tight to keep out salt water and furnish in needed quantity good fresh water.

The island—almost solid rock—is about 1 mile long, a quarter of a mile wide, and 160 feet high. A dense growth of small fir trees covers its rugged surface. Its eastern shore—most of it bold and precipitous—is much exposed to heavy seas, the heaviest gales experienced in the bay always blowing from the southeast. On the other hand, the northwestern shore affords a good lee from heavy weather. That shore, though broken and rocky, slopes more or less gently to the water, according to locality.

The strata of rock forming the island dip at an angle of from 10° to

15° to the west, and the soundings on the northwestern side show this dip to be fairly uniform, the hard bottom being at a depth of 5 fathoms from 200 to 300 feet from the shore.

While this island on its northwestern shore—gale sheltered and with surface sloping toward the waters of the bay—furnishes good sites for the construction of the crib-work piers and sufficient fairly good land for coal sheds, it is believed that the lack of a needed supply of fresh water and of railroad connections constitute serious objections to the establishment of a coal depot there, especially as there are other sites in the bay which have the advantages which Long Porcupine lacks as well as those which it possesses. In the matter of defense, however, a Government plant on that island would be as well protected as any other point in the bay, the War Department having recently mounted guns at Turtle Island, Egg Rock, and Schooner Head, about 4 miles seaward from Long Porcupine.

Before leaving Bar Harbor on this, its second visit, the board deemed it proper to extend its investigations to other points than those of Long Porcupine Island and Mount Desert Ferry, in the waters of Frenchman's Bay.

In accordance with such conclusion, the board hired a naphtha gig and made a reconnoissance of the shores of the bay from Bar Harbor to Salisbury Cove, on Eastern Bay, Crabtree Neck, on the Skillings River, and Sullivan Harbor sides.

Hull's Cove, which lies about half way from Bar Harbor to Salisbury Cove, is the proposed terminus of a projected railroad from Ellsworth to accommodate the Bar Harbor traffic. The topography of the country is such that the road, when built, must run near Salisbury Cove.

The present route of railroad travel is by the Maine Central Railroad from Boston, via Bangor and Ellsworth, to Mount Desert Ferry; thence by steamer to Bar Harbor.

This steamer trip requires about forty minutes, and another ten minutes for changing passengers and baggage from cars to steamer. At least half an hour of this time would be saved by the projected road. Another reason for this road is the sometimes difficulty and expense, in severe winters, of maintaining a channel through the ice which forms, more or less thick, in Sullivan Harbor from the railroad wharf to a point about a mile down the harbor.

Salisbury Cove is completely sheltered from the effects of the heavy southeast gales which prevail in winter, as also is that portion of Eastern Bay which lies east of it. The water along the shore of this portion of Frenchman's Bay is from 5 fathoms to 10 fathoms deep at a distance from 300 to 400 feet from the beach at low tide.

While the board had not the facilities for making a thorough examination of the many points in Frenchmans Bay, it is of the opinion that if the proposed railroad to Hulls Cove is built the south shore of Eastern Bay will afford a more advantageous site for a naval coaling station than any other site examined. That part of Mount Desert Island is flat and low, the waters leaving it are bold, the anchorage is excellent and easily accessible, and an ample supply of fresh water could be had through the means of the fine water system of the island.

Skillings River is too much exposed to heavy southeast storms, but its eastern bank offers a long stretch of fairly low land with bold waters washing it.

Sullivan's Bay, on the east side of Crabtree Neck, has good water up to and beyond Mount Desert Ferry, the terminus of the Maine Central Railroad, but the water along the neck is shoal most of the way. Some

2 miles up the neck McNeil's Point makes out nearly to deep water. This is the point where the railroad company has built its wharf, and which the board in this report has already noted as a good site for a naval coal depot. A pier about 400 feet farther out than the railroad wharf and of any desired breadth, parallel with the channel in Sullivan's Harbor, would, with the good water supply close at hand, afford a coaling plant from which coal could be delivered directly on board our ships, of whatever draft.

Finally, as regards the conditions within the waters of Frenchman's Bay, the board is of the opinion that of the portions of the bay examined three points offer advantages as sites for a naval coaling depot and that the shore of Eastern Bay ranks first, Mount Desert Ferry second, and Long Porcupine Island third.

The work of the board, both at Eastport and Frenchman's Bay, was seriously interfered with by rain and fog, which prevail to a great extent upon this coast during the summer months.

PROVINCETOWN, MASS.

This notable harbor, about 50 miles east-southeast from Boston, is made by the hook of Cape Cod, which surrounds the bay on all sides except on the south. Easily accessible, with bold water and good holding ground on its southern part, it offers an excellent base for naval operations in time of war, but it has to-day no defensive works worthy of mention.

The town stands on the northern shore of the bay. There the water is quite shoal—so shoal that piers to reach a depth of 30 feet would require to be of very great length. On the other hand, the water on the southern part of the bay just back of Wood End is so bold that piers of but short length would have to be built to reach the 5-fathom line.

Wood End, however, is not near the railroad, but is at the end of a long, narrow spit which makes out from the high land west of the town, extends south and then turns east, making the total distance by land from the railroad terminus to Wood End about 3 miles.

In view of the proximity of Provincetown to Boston and the navy-yard there, where coal can always be readily had, together with the lack of defenses at Provincetown, the cost of plant and the expense of its maintenance, especially in time of peace, the board does not recommend the location of coal pockets there. It suggests, however, that coal hulks with proper hoisting apparatus could be used with advantage at that point in time of war.

NEW BEDFORD, MASS.

This southern seaport of Massachusetts, making in from Buzzard's Bay, lies at the head of a long, narrow channel in which there is about 18 feet of water, and about 3 miles from water having a depth of $4\frac{1}{2}$ fathoms, but it is a large coal-distributing point which might be made good use of for light-draft vessels in case of great necessity.

The Philadelphia and Reading Coal and Iron Company now has about 60,000 tons of coal stored there, and handles, in addition to its anthracite business, about 125,000 tons of bituminous coal per year, which, when stored in pockets, can be easily loaded into vessels drawing 18 feet of water moored to the side of the wharf.

David Duff & Son, who have storage capacity in pockets for 10,000 tons of coal and capacity in yard for 130,000 tons more, usually carry a stock of about 12,000 tons.

Garfield and Proctor have storage capacity for 6,000 tons and are preparing plans to increase their storage capacity.

In view of the fact of the large private coal stores, distance of the city from deep water, distance of deep water from railroad facilities, and the short distance between New Bedford and New London, the board is of the opinion that it is not advisable to establish a Government coal depot at New Bedford.

In conclusion, the board recommends that the following places be provided with coal pockets of the capacities stated:

	Tons.
Frenchman's Bay, Maine	15,000
Portsmouth, N. H. (navy-yard)	10,000
Boston, Mass. (navy-yard)	15,000
New London, Conn. (naval station)	25,000
New York, N. Y. (navy-yard)	5,000
League Island, Pa. (navy-yard)	2,000 to 5,000
Washington, D. C. (navy-yard)	1,000
Norfolk, Va. (navy-yard)	5,000
Port Royal, S. C. (naval station)	15,000

It also recommends that the coaling stations be equipped with modern steam hoisting apparatus and that after being hoisted the coal be deposited in pockets, from which it can flow by gravity into cars, and that the track systems of the various stations be extended to connect the boiler plants and coal pockets. This arrangement will concentrate coal stores, remove the ugly coal piles from land which is more valuable as sites for shops, and in every way add to the efficiency of the navy-yards.

Copies of correspondence with the Chief of Bureau of Equipment, marked F; a memorandum of the Bureau of Navigation addressed to the Secretary of the Navy, marked G; correspondence with Hon. A. W. Butler, mayor of Rockland, Me., marked H; correspondence with Mr. T. F. Moran, of Bar Harbor, Me., marked I; and a letter addressed to the President of the United States by Mr. Henry C. Bucknam, of Eastport, Me., marked J, are herewith appended to this report.

Very respectfully, your obedient servants,

GEO. E. BELKNAP,

Rear-Admiral, U. S. N., Retired, President of the Board.

ALLEN V. REED,

Captain and Member.

C. W. PARKS,

Civil Engineer and Member.

Hon. JOHN D. LONG,

Secretary of the Navy, Navy Department, Washington, D. C.

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REPORT OF THE CHIEF OF THE BUREAU OF YARDS AND DOCKS.

DEPARTMENT OF THE NAVY,

BUREAU OF YARDS AND DOCKS,

Washington, D. C., October 1, 1898.

SIR: In obedience to the instructions contained in the Department's letter of July 11, 1898, I have the honor to submit herewith a report of

the operations of the Bureau of Yards and Docks for the fiscal year ended June 30, 1898, accompanied with annual estimates for the fiscal year ending June 30, 1900.

The term of Rear-Admiral Edwin O. Matthews as chief of this Bureau expired on March 15, 1898.

The appointment of the present chief of this Bureau dates from April 4, 1898.

OPERATIONS FOR THE FISCAL YEAR 1897-98.

NAVY-YARD, PORTSMOUTH, N. H.

The expenditures of this yard have been confined to keeping present works in repair and to the general maintenance of the yard in matters of transportation, heating, lighting, cleaning and clearing the yard, pay of watch force, and incidental expenses, aggregating for both of the above objects about \$33,000.

No works of improvement have been carried on during the year under the cognizance of this Bureau.

The total expenditures, including the civil establishment, have been \$39,354.55.

NAVY-YARD, BOSTON, MASS.

The total expenditures at this yard have been \$65,326.89. The funds have been applied to the repairs of yard buildings (the largest item), and other items include expenditures upon officers' quarters, wharves, roads, heating apparatus, repairs to the dry dock, and miscellaneous repairs, aggregating about \$28,000, while the balance has been chiefly devoted to the general maintenance of the yard in the matters of pay of watch force, water tax, heating and lighting, and maintenance of teams, etc.

The only objects of improvements carried on during the year have been in slight extensions of the electric-light system.

The works have been maintained in a fair state of preservation and met very well the demands made upon them during the war of this year.

NAVAL STATION, NEW LONDON, CONN.

The expenditures at this station have been very small, and have been confined to a few slight repairs to wharves and other objects and the care of the property.

Congress at its last session granted a right of way through the naval station, New London, Conn., to the Norwich and Worcester Railroad Company, by act approved March 23, 1898. By authority of that act the Secretary of the Navy was required to designate a route of such width, upon such location, and upon such terms, through the naval station as he might deem best. A location for this road was surveyed, and approved of by the Department under date of May 28, 1898. One of the conditions upon which the right of way was granted was, that a spur or branch be built to the wharf or other point for coaling or other purposes upon such grades and location and of such material and construction as shall be approved by the Navy Department, to be maintained and operated for freight transported or to be transported upon the Norwich and Worcester Railroad by the company.

In accordance with the grant and the conditions prescribed by the Department, the Norwich and Worcester Railroad has entered upon the work and it is now well advanced. The construction of this road, and

the switch and spur provided, to be connected with the coaling station to be established here, will doubtless prove of great value in connection with the latter.

In the deficiency bill, act approved July 7, 1898, an appropriation was made for the construction of coal-storage pockets or sheds and coal-handling machinery at this station amounting to \$200,000. Specifications have been prepared for this work and invitations issued for proposals and plans, which have been received and contract has been made for the construction. The plans contemplate a storage capacity of 10,000 tons. The location of the station and the plans received are such, that these works can be extended to store an indefinite quantity of coal at this point. The Naval Coal Board, which has recently reported upon the matter of coaling stations upon the North Atlantic coast, recommends that provision be made at this point for storing 25,000 tons of bituminous coal.

The Department, in Special Order No. 74, under date of July 1, directed the transfer of enlisted men to ships and stations and of the stores to other yards, and turned over the charge of the station to the Bureau of Yards and Docks, a small force of civilian employees to be retained by the Bureau of Yards and Docks to take care of the property.

NAVY-YARD, NEW YORK, N. Y.

The expenditures at this yard during the fiscal year were \$408,166.27. Of this sum there were expended upon works of improvement completed during the year \$193,240.07. Included in these objects were the causeway across the Wallabout Channel, several sections of quay wall in the main yard and on the cob dock, dredging the channel, improvements in ordnance building No. 13, and the erection of latrines.

Under appropriation made by Congress for national defense, a few thousand dollars were expended in enlarging the facilities for the transfer of stores, extending the electric-light system, and the erection of a temporary storehouse for provisions for ships.

Of the expenditure of about \$120,000 for the repair and preservation of this yard, one-half was upon the yard buildings.

This is the most active yard in the country, and it has been found necessary to make very extensive repairs to put the buildings in good condition for the purposes intended, and in many of them it has been necessary to make extensive alterations and modifications to fit them more fully for the present needs of the service.

Another large item of expenditure under this head has been about \$16,000 for water and electric-light works, upon which very heavy demands were made during the early months of the war. Other repairs were of a miscellaneous character.

At the end of the fiscal year the repairs to timber dock No. 3, for which special appropriation was made by Congress, and the occasion for which was set forth in the last annual report, were well-nigh completed. The expenditures on this object during the year have been about \$145,000.

Since the end of the fiscal year the repairs have been practically completed, and several of the battle ships have been successfully docked in it.

In the spring reports were received from the navy-yard that the entrance works of timber dock No. 2 were in bad condition and in need of very extensive repairs, and it was feared that it might be in a dangerous condition. The Department appointed a board of civil engineers to

make a careful examination as to the condition of the dock, with recommendations for such repairs made by such methods as they deemed best, together with an estimate of the cost. The board rendered its report, which was in substance that the entrance works were so far deteriorated as to require renewal, and, in their opinion, such renewal should be in concrete instead of in timber, as originally constructed, the entrance in concrete being more stable and permanent than the timber construction. The estimate of cost was \$300,000, which Congress appropriated in the deficiency bill, July 7, 1898.

Preparations have been made for the beginning of this work, but as the dock will be thrown entirely out of service during the work of repairs, it was deemed inadvisable to undertake them earlier, because of the urgent need for the use of this dock during the war with Spain, and after the cessation of hostilities it was still important that it be not thrown out of use until dry dock No. 3 was again ready for use. Dry dock No. 3 has been put into service, after being for a long term under repairs, and many of the more important vessels for foreign service have been docked since the cessation of hostilities. It is expected that repairs to dry dock No. 2 will soon be undertaken. When repaired in the manner proposed, with a substantial concrete masonry entrance, and such repairs as were found to be necessary to the interior, the dock will be in good condition for many years' service.

The general maintenance of the yard has cost about \$64,000, and the largest items have been for transportation in the yard, coal and fuel, cleaning and clearing the yard, water tax, and pay of watch force.

NAVY-YARD, LEAGUE ISLAND, PA.

At the League Island Navy-Yard the outlays of this Bureau amounted to \$171,866.59. Of this sum there were applied to repairs and preservation \$36,608.29; to the general maintenance, \$22,368.88; and to works of improvement, \$106,896.13.

The yard has been kept in a state of good repair, and several improvements have been prosecuted under special appropriations by Congress, some of them being completed. The works include grading and paving back of the sea walls, a new boiler house for steam engineering, a 20-ton wharf crane, two 20-ton weighing scales, and lesser objects.

A considerable expenditure was upon wharves and approaches to the reserve basin being constructed in the back channel west of Broad street, in order to render it better available for use in properly securing the vessels in reserve and for convenient access to them.

The two wharves are of wood, substantially built, about 500 feet apart on the southern side of the basin. A plank roadway was laid along the top of the dike from Broad street, the main avenue of the yard, to the wharf approaches.

The contract for an artesian well, water tower, storage tank, and pumping apparatus was completed in the early part of the present calendar year. The works have been in service since that time and proved successful.

Dredging on the Delaware River front was continued under a special appropriation for the purpose, making a depth of 28 feet at mean low water, and affording berths for the larger vessels in the Navy.

Under appropriation by Congress for dredging the fresh-water basin in the back channel for vessels in reserve, a contract was entered into at the close of the fiscal year 1897 for the construction of a basin 2,400

feet long, 300 feet wide, with a depth of 30 feet at mean low water. This work has been carried on successfully during the fiscal year, the material dredged upon the site of the basin being deposited upon the yard for the purpose of bringing up to grade large areas which were much below a height necessary for the further development of the yard.

At the close of the fiscal year the work had been about two-thirds completed, and a large portion of the basin made available for ships in reserve, which was utilized for the purpose intended prior to the outbreak of the war.

A further appropriation for this object having been made by the last Congress, the basin will soon be of proportions to accommodate a large number of vessels in ordinary.

The work of dredging, now in progress, was contracted for at the very favorable rate of 9.9 cents per cubic yard, deposited in the yard for filling in.

NAVY-YARD, WASHINGTON, D. C.

The expenditures at this yard by this Bureau for all purposes have been about \$89,000 during the year. About \$16,000 were expended upon improvements, including dredging in front of the yard, new roofs for foundry and quadrangle building, new scale house, new storehouse for guns, etc.

The expenditures for the new roofs and the storehouse for guns are by way of progress upon works still incomplete.

The repairs have been of a miscellaneous character, and devoted chiefly to keeping the yard buildings in good condition.

The general maintenance of the yard has cost about \$17,000.

Storehouse No. 2 was damaged by fire. The cost of restoration was \$12,813.69, and was paid from appropriation contingent yards and docks.

Under appropriation of national defense an expenditure of about \$10,000 was made, almost entirely for extension of the electric-light plant, made necessary by the large amount of work carried on at night during the active preparations for war.

NAVY-YARD, NORFOLK, VA.

There have been expended at this yard under the cognizance of this Bureau during the past year \$227,838.67. About \$130,000 of this sum have been for yard improvements, about \$49,000 for general repairs, and about \$38,000 for the general maintenance expenses.

The improvements completed during the year include an extension of the quay wall between the timber basin and marine railway, rebuilding construction and repair blacksmith shop, installing an engine and pipe system for fire service, and dredging in front of the navy-yard.

The dredging has secured a depth of 30 feet at mean low water, which has now been attained in the entire water front of the yard and over nearly the full width of the channel.

Other works of improvement in which progress has been made are repairs to timber dry dock, upon which about \$21,000 were expended, until the appropriation was exhausted in April last, when work was suspended awaiting further appropriation by Congress; paving, grading, sewers, and extension of quay wall north of the timber basin.

A very considerable expenditure has been made for repairs upon the yard buildings, and moderate sums upon wharves and landings, roads, heating apparatus, railroad tracks, water and electric works, etc.

The yard is in a very good state of repair, and met the demands made upon it during the emergency of the latter part of the year in a very efficient manner.

The electric-light system has been kept in good repair and extended into all the workshops of the yard for night work; also along the water front, where lights have been furnished to all ships under repair at the wharves and in dry dock.

The demand for light in the shops and upon wharves has been so great that it has been impossible to properly light the streets, but this defect will be supplied by an appropriation made by the last Congress for an extension of the system.

The general maintenance of the yard has been for the usual items under that object, and has been exceptionally large in the matter of the pay of the watchmen, which has consumed one-third of the total, or \$12,533.

A provision in the last naval act authorized and directed the Secretary of the Navy to cause to be commenced, and the Attorney-General to carry on, proceedings for the condemnation of a tract of land for the purpose of constructing a wet dock, and for other purposes, known as the Cedar Grove property, containing 50 acres lying immediately opposite the Gosport Navy Yard, in the State of Virginia. In accordance with this law proceedings were commenced and carried on, and the commissioners for the condemnation of the land have rendered their report, wherein they fix the compensation for the property at \$145,687.50, which is based on a valuation of the premises at \$87.50 per foot front. As the United States attorney states in his report to the Attorney-General that there is some doubt as to the exact length of the frontage, a careful survey is now being made with a view to an exact determination of such length, whereby to fix the amount of the compensation to be paid for the land.

NAVAL STATION, PORT ROYAL, S. C.

The expenditures at this station for all objects under this Bureau amount to \$51,654.78. Of this sum about \$32,000 were for improvements, the remainder being for repairs, general maintenance, and civil establishment.

Two or three small objects of improvement were completed and progress was made upon the construction and repair shop, artesian well, and dredging in the channel opposite the station.

The construction and repair shop was nearly completed at the end of the fiscal year, but has been entirely finished since, and tools installed ready for use.

The artesian well, which has been in progress for a considerable time, had attained a depth of 1,500 feet at the end of the year, with small promise of success.

The dredging operations in the channel were commenced in March, 1898, and have progressed slowly since. The material encountered is very hard and difficult to excavate. Sufficient has been done, however, to afford a safe berth for the largest vessels of the Navy at all stages of the tide at the station wharf.

By authority of Congress several tracts of land contiguous to the station have been condemned for the use of the United States, and the last Congress made an appropriation of \$20,325.50, in addition to the amount previously appropriated, for the purchase of the said land.

Title has not yet been taken, pending the completion of the investigation as to the validity of the same.

The repairs at the station have been of a miscellaneous character and aggregated about \$9,500, of which about \$4,800 were upon the dry dock.

The maintenance of the yard has cost about \$5,000.

NAVAL STATION, KEY WEST, FLA.

The expenditures at this station have been of moderate extent, being a total of \$12,672.45.

A modern steel shop for the Bureau of Steam Engineering was contracted for and work commenced near the close of the fiscal year.

It was decided by the Department, in view of making Key West a naval base in the war with Spain, to provide at this point a coaling station of large capacity for storage, and with convenient facilities for the receipt of coal and for its delivery. A contract for the coal sheds and pier was made with the Union Bridge Company, and work was commenced just prior to the close of the latter part of the year, but up to its close little work had been done upon the ground.

A contract was also made with the Brown Hoisting and Conveying Machine Company for modern coal-handling machinery, which is to be installed in connection with the work.

This plant is to house 15,000 tons, making the entire storing capacity of the station 22,000 tons.

This was a very busy station just prior to and during the war with Spain, and its capacity has been taxed to the utmost in every way—in room for the storage for supplies for ships, in facilities for repairs to vessels, in storage for coal, in convenience for handling the same, and in wharfage.

DRY TORTUGAS.

When the war with Spain was imminent and the vessels of the Navy began to assemble at Key West, it was decided by the Department to increase the facilities for coaling vessels at Key West, where a small plant already existed, and to establish a coaling station at Fort Jefferson, Dry Tortugas, Fla. Plans were projected with a view to storing at this point a supply of 20,000 tons of coal, with the necessary appliances for receiving it and delivering it to the vessels of the Navy. They were prepared in haste, and included two steel coaling piers and two groups of coal-storage houses, one upon a point of land outside the fort upon the northeast, and another upon a similar projection of land at the southeast. On account of the situation, isolated from the mainland, and the fact that the waters are infested with the marine worm, it was decided to put up structures which would be durable in character, necessitating few repairs, and of the most modern design with respect to dispatch of work in handling coal, and economy. The sheds were to be entirely of steel and the piers were to be of steel, including the piles, the only timber in the construction being the wharf decking.

Contracts for these works were made with the Union Bridge Company of New York and the Brown Hoisting and Conveying Machine Company of Cleveland, Ohio, upon the 6th of April last, aggregating in cost about \$425,000. These works were undertaken at once, and, although much work had been done upon the structures in the shops in the North, but little had been done upon the site of the works at Dry Tortugas up to the end of the fiscal year.

The contract with the Union Bridge Company is for the piers and sheds, and that with the Brown Hoisting and Conveying Machine Company for the machinery for handling coal. The works, as contracted

for, provide for receiving and storing coal in the sheds by machinery, and for its removal from the sheds and delivery to vessels or floats at the pier in the same manner.

The old method of storing and delivering coal to vessels, as practiced at the Key West Naval Station, was costing the Government more than \$1 per ton, but it is expected that under the new system the coal will be received and delivered again to vessels at a total cost of a few cents per ton—probably not more than 6.

The island upon which the fort is situated is under the control of the War Department, but sufficient space for the construction of this plant has been granted to the Navy Department. It is expected that it will be completed in a short time, and will prove to be very successful in every respect and economical in maintenance and operation.

The channel of the harbor at Dry Tortugas was not of sufficient depth and width for free navigation for the largest vessels of the Navy, and it became necessary to improve it by dredging to a uniform depth of 30 feet at mean low tide, with a minimum width of 300 feet upon the bottom. The amount of material necessary to be removed to thus improve the channel was about 330,000 cubic yards, and a contract was entered into for this work with the Alabama Dredging and Jetty Company, under date of March 29, 1898. The work was commenced soon after, but a portion of the material encountered was harder and more difficult of removal than expected, and not much of the work had been completed up to the end of the fiscal year.

NAVY-YARD, PENSACOLA, FLA.

The expenditures at this yard were about \$30,000, about \$12,000 of which were for repairs. This latter sum was applied chiefly to repairs to buildings, quarters, roads, railroad tracks, water supply, etc. An equal amount was expended for general maintenance of the yard, about \$5,700 of which was for the pay of the watchmen.

No works of improvement appropriated for by Congress were prosecuted during the year.

ALGIERS, LA.

The Government owns a naval reservation at Algiers, upon the west bank of the Mississippi River, opposite the city of New Orleans, of 66 acres extent. No improvements exist at this point and it has not been used for any purpose, dating back to a period soon after the close of the civil war. The construction of a dry dock at this point has been in contemplation by Congress for several years, and under its authority the area of the station was increased by the purchase of additional land, with this object in view. At its last session Congress made an appropriation for the construction of a steel floating dry dock, of domestic manufacture, to be located at this point, at a cost not to exceed \$850,000. A study has been made of the physical conditions existing at the site of the naval reservation, and specifications have been prepared as a preliminary guide in the preparation of plans to meet the conditions set forth in the act of Congress and those deemed important by the Bureau in a structure of this class. Advertisement has been made calling for plans in accordance with the specifications and proposals for the construction, which will be opened in a few weeks.

NAVY-YARD, MARE ISLAND, CAL.

Large expenditures were made at this yard during the fiscal year, amounting to about \$402,000.

Under the head of improvements the extension of the quay wall, in progress during the fiscal year ended June 30, 1897, was completed soon after the beginning of the year.

Various works of improvement not completed at the end of the fiscal year were carried on, particularly the shipfitter's shed and extension of the quay wall, authorized by act of March 3, 1897, dredging in front of the navy-yard, and for a channel in Mare Island Strait, under the same act, at a cost during the year of nearly \$141,000 for the latter.

The work of dredging was begun in September, 1897. The channel, 28 feet deep at mean low water, has been made from the yard to the deep water in front of the magazine. It is 400 feet wide for a distance of 5,600 feet, and the remainder, to the magazine, is of a width of 250 feet. The dredging of the channel in front of the yard has covered an area of about 1,500 feet by 400 feet. The total excavation up to the end of the fiscal year has been about 1,150,000 cubic yards.

The material excavated is being deposited on the low tule land on the island.

This dredging was authorized by Congress with a view to providing a sufficient depth of water for naval purposes in front of the yard, and thence through Mare Island Strait to the bar at its mouth.

On the night of March 30, 1898, at 11.40 p. m., there was an earthquake at the yard which lasted forty seconds. The damage done to the buildings of the yard was very great.

The cost to repair and reconstruct buildings and property was estimated at \$350,000. An appropriation for that sum was made by Congress for the purpose, to be immediately available, and steps were taken to make such temporary repairs as were necessary, the permanent repairs to follow.

The twelve officers' quarters were found, by a board of officers and experts called in from outside, to be so badly damaged as to be unsafe for occupation. They were condemned and entirely new quarters are to be constructed in lieu of them; the new quarters to be built of wood, however, rather than brick, which was the material of construction in those destroyed.

The construction and repair sawmill was entirely destroyed, the collapse of the building being complete.

A large chimney of the construction and repair shops was so badly cracked and shattered that it had to be torn down 60 feet from the top and a temporary shaft built up from this point, the entire chimney to be replaced ultimately with a new one. Other buildings were injured more or less, in some cases portions of the walls falling, in others the injuries being slight.

Under appropriation for repairs and preservation, there have been expended at this yard during the year nearly \$73,000, of which about \$24,000 were upon the yard buildings, \$10,000 upon officers' quarters, about \$13,000 upon waterworks, which included the laying of a new main 6 inches in diameter across Mare Island Strait, to connect the Vallejo water system with the navy-yard, and about \$11,000 for miscellaneous repairs.

The general maintenance of the yard cost \$59,000, the principal items being for maintenance of teams, about \$8,600; fuel and electric light, about \$18,000; cleaning and clearing the yard, about \$7,300, and water tolls and ferriage, \$10,000.

NAVAL STATION, PUGET SOUND, WASH.

The total expenditures at this station reached \$108,345.27 during the year. The improvements aggregated a cost of about \$85,000, the principal objects being for the construction and repair shop and general storehouse, also grading and clearing the station.

The construction and repair shop and the storehouse were very near completion at the end of the fiscal year, and are now ready for occupation and use.

The repairs to the station cost about \$13,500, and are of a miscellaneous character.

The general maintenance of the yard has cost about \$7,000.

NAVAL HOME.

The Department, under date of March 19, 1898, issued an order transferring the personnel of the naval home and its administration from the Bureau of Yards and Docks to the Bureau of Navigation. The buildings and grounds, however, were reserved from this transfer and remain under the charge of the Bureau of Yards and Docks.

REPAIRS AND PRESERVATION.

The expenditures at all the navy-yards and stations during the past fiscal year under this head reached a total of \$392,570.32. The character and extent of the more important of these expenditures have been indicated in the reports under the various navy-yards and stations, and therefore require no particular mention under this head.

GENERAL MAINTENANCE.

The expenses under the appropriation for the general maintenance of the navy-yards reached the sum of \$280,641.33, and are made up of the various outlays incident to the maintenance of the yards and stations. They are particularly referred to in the preceding reports of expenditures at the various yards.

Summary of expenditures, 1897-98.

Improvements	\$832, 378. 73
Repairs and preservation.....	537, 570. 32
General maintenance.....	280, 761. 47
Contingent	15, 580. 17
Civil establishment at yards and stations.....	65, 151. 08
National defense	40, 712. 75
Total	1, 772, 155. 10

CONTINGENT, YARDS AND DOCKS.

The appropriation for contingent expenses of the Bureau for the last fiscal year was \$20,000. Of this, about \$15,000 have been expended, nearly all of it, or \$12,152.01, for repairing damages to building No. 2 at the Washington Navy-Yard, which resulted from the fire referred to in a previous part of this report. This appropriation is only for expenses of a character unforeseen and not provided for in the regular appropriations, and any balance after providing for such is allowed to revert to the Treasury.

DRY DOCKS.

The dry docks provided for just previous to the close of the last session of Congress included four timber dry docks and one steel floating dock.

With reference to the four timber docks, the law fixes the locations as follows: One at the navy-yard, Portsmouth, N. H.; one at the navy-yard, Boston, Mass.; one at the navy-yard, League Island, Pa.; one at the navy yard, Mare Island, Cal.

With this provision, however, was coupled the condition that the Secretary of the Navy is authorized in his discretion to build one of said docks of granite, or concrete faced with granite, and, in such case, extending the limit of cost for said dock \$200,000 in excess of the \$25,000 placed as a limit of cost upon each timber dry dock. In the exercise of this discretion you decided that the dry dock at the Boston Navy Yard should be built of granite, or concrete faced with granite. Upon the passage of the act, the preparation of plans for these docks was taken in hand as soon as a force could be organized for the purpose; boards have been appointed at some of the yards to recommend locations for them, and, where necessary, examinations of the physical conditions existing at the sites have been made or are being made by means of surveys, examinations, and borings. Plans and specifications for the Boston dry dock will soon be issued and bids invited for its construction. Plans and specifications and invitations for bids in the cases of the other docks will closely follow that of Boston.

As stated in a previous part of this report, invitations for bids for the steel floating dock to be located at Algiers, La., have already been issued. Since the advertisement of this work the Bureau has been asked whether bids would be entertained from foreign bidders, and, in response to repeated requests upon this point, it has decided that the language of the act which provides for the construction of a steel floating dock of domestic manufacture intends that it shall be of domestic manufacture, both in respect of the materials entering into it and of all labor and services of whatever character in connection with it, and persons and firms making such inquiries have been so informed.

Appropriation was made by Congress for two floating dry docks for use on the Gulf coast, at a limit of cost to \$250,000 for both. One floating dock, of about 2,400 gross tons capacity, was purchased under authority of this act for transfer to the South, but as the prospect of peace soon followed, the purchase of a second was not made, and one-half the appropriation of \$250,000 will be allowed to revert to the Treasury.

The Gulf coast has not had for many years upon its shores, or waters tributary to it, a naval dry dock of any kind. The subject of the location and construction of one upon these waters has often been brought to the attention of Congress, and several boards have been appointed to make a study of the subject for the purpose of recommending the point best adapted for the location of a dock to meet the needs of the service in this section. No legislation had gone so far as to provide for such an appliance until, at the last session of Congress, appropriation was made for the construction of a floating dock at Algiers, as above referred to, and for the purchase of the two small docks above mentioned. The latter were to be of a size to accommodate only a part of the Navy, while the first, although a large floating dock of the greatest capacity, is to be established at New Orleans, 100 miles above the mouth of the Mississippi River.

The experiences of the last war have shown the importance of having docking facilities, not only for small vessels but for the battle ships, upon waters near Key West, which was then, and may be in the future, an important base of naval operations, and adequate docking facilities should be provided somewhere in the vicinity of Key West and Dry

Tortugas, which points have been pronounced by able strategists to be the key to the Gulf of Mexico. The naval establishment upon the Gulf coast will be deficient in this most essential particular until the best docking facilities are so provided, and it is considered of the highest importance that careful study be given to the subject to determine some point at which they shall be permanently established.

Had the war with Spain continued many months more the absence of docking facilities in these waters would have been most seriously felt, and the failure to possess such might, in a more prolonged war, seriously affect its fortunes.

The docking facilities of our Navy, notwithstanding those recently provided for by Congress, will be only moderate in extent, and with a very extensive coast line it should be the policy to establish at several of the most important waters ample provisions for handling a large fleet for repairs with great expedition.

United States naval dry docks.

Character.	Station.	Material of construction.	Length on floor.	Width of entrance at coping.	Depth over sill at mean high water.
			<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>
Balance.....	Portsmouth, N. H.....	Wood	350 0	90 0	25 0
Graving	Boston, Mass	Granite	367 5½	60 0	24 10
Do.....	New York, N. Y	do.....	338 3	66 0	25 3
Do.....	do	Wood	459 10	85 0	25 6
Do.....	do	do.....	626 8	105 2½	29 0
Do.....	League Island, Pa	do.....	459 10	85 0	25 6
Do.....	Norfolk, Va.....	Granite	302 9	60 0	25 0
Do.....	do	Wood	459 10	85 0	25 6
Do.....	Port Royal, S. C.....	do.....	459 0	97 0	26 0
Do.....	Mare Island, Cal.....	Granite	459 0	80 6½	27 6
Do.....	Puget Sound, Wash...	Wood body, masonry entrance	618 6	92 7½	30 0

A table accompanies this report showing how meager are the accommodations we now possess in this respect. The small showing we make in this vital part of our service is only the more marked when compared with what other naval powers of the world have found necessary.

The expenditures for dry docks will be large in the next two years, but the Bureau can not fail to ask a continuation of a liberal policy in this particular until the country is well fitted for handling its fleets in the dockyards without vessels being compelled to perform long sea voyages to reach the docking ports. To effect this will involve the construction of many more dry docks, but there is no alternative in an efficient and strong navy.

The present estimates carry only one new dry dock, that for the Norfolk Navy-Yard, elsewhere mentioned, and it is requested that it be appropriated for, the cost of which will extend over a period of three years and not add greatly to the yearly expenses.

These public works are large in first cost, but when designed of permanent materials and well built they become lasting improvements of the highest value to the service and entail a very moderate percentage for maintenance.

HOUSING TORPEDO BOATS.

Congress having appropriated the sum of \$200,000 for housing torpedo boats at some navy-yard or station, you constituted a board composed of the chiefs of the Bureaus of Yards and Docks, Ordnance, and

Construction and Repair to consider the subject of the best location for such a plant. After a careful study of the subject the board recommended that the Boston Navy-Yard be designated by you as the point at which provision should be made for hauling out and housing torpedo boats, which has been done.

In accordance with your direction, steps are being taken to perfect a plan and specifications for such work, preparatory to advertisement for proposals, keeping in view your direction to exercise economy in the work, and having in prospect the establishment of another station at some other point under the balance remaining, or such balance supplemented by further appropriations.

It is proposed to locate the plant in the northern part of the navy-yard, at the site of the present timber basin.

COALING STATION AT SAMOA.

By act approved March 2, 1889, Congress appropriated the sum of \$100,000 for establishing a station for coaling supplies for the naval and commercial marine of the United States at Pago Pago, island of Tutuilla, Samoa. By act approved April 4, 1890, and before any steps had been taken toward the construction of such a station, Congress authorized the payment from this appropriation of the expenses incurred in the purchase, shipment, and discharge of coal for the naval station, Pago Pago, Samoa, of \$36,041.87. This left available for the station the sum of \$63,958.13.

Plans and specifications were matured for a coaling pier to be constructed at this point, advertisements for which were issued on October 22, 1892. The lowest bid received for the work was \$71,700, which, being in excess of the balance of the appropriation, could not be accepted.

The question of whether funds appropriated in the sundry civil appropriation act of August 5, 1892, \$250,000, to be expended under the direction of the President for providing naval and coaling stations, could be used to supplement the balance mentioned, was submitted to the Attorney-General for his decision, which was favorable, but no further steps were taken toward the construction of coaling facilities, although certain tracts of land at Swimming Point, in the harbor of Pago Pago, were purchased by the Government for the purposes of such a station, and title was acquired to several acres of land at this advantageous site. The cost of the purchase of this land and sundry incidental expenses reduced the available balance to \$56,980.33.

Congress at its last session, in act of July 7, 1898, made an appropriation of \$250,000 to provide for the establishment of depots for coal by the Secretary of the Navy. Under this appropriation and the balance of appropriation act of March 2, 1889, above referred to, steps have been taken toward the construction upon the United States property of a steel pier and coal sheds and other improvements, to provide facilities for storing and handling 5,000 tons of coal and other supplies for the Navy, by the joint action, under your authority, of the Bureaus of Equipment and Yards and Docks. Plans and specifications were prepared in this Bureau, a civil engineer was detailed as superintendent of construction, and the Bureau of Equipment has made a contract for the works, which, at this writing, are being prepared for shipment from this country.

The accompanying chart of the harbor of Pago Pago shows, in color, the lands at Swimming and Observatory points purchased by this Government as the site for a coaling station, and which are about 15 acres in extent.

NAVAL STATION, SAN JUAN, PORTO RICO.

Since the close of the fiscal year the Government of the United States has come into possession of Porto Rico, and in the port of San Juan a naval arsenal, which is located on the northwest shore of the bay, containing about $4\frac{1}{2}$ acres.

This arsenal was founded in the year 1800. Works have been added from time to time, and approaches to it were built in 1847. It contains a number of buildings and three small piers, two of which are of wood and one of stone. It has two quarters and offices.

The station has been used chiefly as a base of supplies for coal, provisions, etc. The buildings generally are in poor and unsanitary condition. The total valuation of the buildings and grounds is about \$100,000, of which \$80,000 represent the value of the buildings and piers and \$20,000 the value of the ground.

A plan accompanies this report showing the harbor and situation of the arsenal; also a plan of the arsenal grounds.

Steps have been taken to make use of this property as a naval station. An officer has been detailed to its command, and subordinate officers have been detailed to duty there preliminary to its being availed of for the purposes of the Navy.

ESTIMATES FOR THE FISCAL YEAR 1899-1900.

Estimates are submitted for the fiscal year ending June 30, 1900, as follows:

NAVY-YARD, PORTSMOUTH, N. H.

Dispensary building, to replace hospital building No. 28.....	\$6,000
Sawmill for construction and repair.....	30,000
Foundry for construction and repair.....	40,000
Plate, angle, beam, and smith's shed, construction and repair.....	35,000
Electric-light plant.....	50,000
Electric-light building.....	30,000
Two officers' quarters.....	15,000
Coal-storage buildings and coal-handling machinery.....	100,000
Total.....	306,000

Dispensary.—The old hospital building is now used as a dispensary, but it is dilapidated and not well suited to the purpose, and a new building should be erected for a medical officer's office, consultation room, dispensary, and a place for a few medical stores.

Sawmill, foundry, etc.—At the request of the Bureau of Construction and Repair, estimates are submitted for a sawmill, foundry, plate, angle, and beam shed, as enumerated above, and are represented by that Bureau to be necessary improvements in the construction plant of that yard, in which view this Bureau concurs.

Electric plant.—The yard at present is poorly lighted by gas made by the Government upon the yard.

The modern system of electric lights is necessary for the proper lighting of the buildings, quarters, yard, etc., and such a system would be a great improvement upon the present gas plant, and would be of the greatest importance and value for night work in time of war or in any other emergency.

The estimates submitted include an adequate plant for this purpose, and a building to contain the machinery.

Officers' quarters.—Estimates are submitted for the construction of two officers' quarters, which are considered necessary, in order that all officers having departments or important works under their charge may be always present in the yard.

Coaling facilities.—An estimate is submitted for buildings for the storage of coal and coal-handling machinery, with the view of providing for the supply of 10,000 tons, in accordance with the recommendation made to the Department by the naval coal board.

The improvements above recommended are regarded as important in the main, and absolutely necessary if this navy-yard is to be used for repairing and fitting out ships.

NAVY-YARD, BOSTON, MASS.

The following improvements are recommended to be appropriated for:

For new gate and entrance house to navy-yard	\$25, 000
New railroad system	40, 000
Locomotive and cars	10, 000
Constructing new wharves, extension of old ones, and dredging.....	100, 000
Buildings for storage of coal, and coal-handling plant.....	130, 000
Repairing yard drainage system and connecting with metropolitan sewer..	12, 000
Electric-light building, with appliances for receiving coal.....	50, 000
Total	367, 000

Gatehouse.—A new gatehouse is necessary at this yard. The present building is of light construction, too small for the requirements, inconvenient in arrangement, in no way suitable as the main entrance to the Boston Navy-Yard, and is in a badly deteriorated condition. It is desired to replace it with a building which shall be convenient and ample for its purpose and of construction in keeping with other buildings and constructions in the navy-yard.

Railroad.—The present railroad is one with rails of an old-fashioned flat section, which do not admit of the entrance of a locomotive to the yard.

Transportation in the yard at present is expensive and slow, and it is important that a good, modern railway system be laid down in the yard, which will allow the rolling stock of other railroads to enter, and which will afford expeditious and economical transportation of materials, supplies, etc., about the yard and to the water front.

Coaling facilities.—The coal-storage provisions at the yard are very limited in extent and not of the best form, and it is desired to erect an ample and well-equipped plant which shall be capable of receiving and delivering coal quickly and economically and afford the amount of storage recommended by the Naval Coal Board, namely, 15,000 tons.

Electric plant.—At its last session Congress appropriated for an increase in the electric-light plant of this navy-yard, which is about to be installed at a more advantageous point than that occupied by the present inadequate plant. This will be sheltered temporarily in its new position, but a new, substantial, and ample building should be provided for properly containing the enlarged plant, together with modern appliances for receiving coal and feeding boilers.

Cession of lands under water.—Several improvements projected at the Boston Navy-Yard were authorized at the last session of Congress, one of which, at least—a new dry dock—will project into the harbor beyond the present wharf line. No harbor line having been established in front of this navy-yard, the Department requested of the War Department, which is empowered by law to locate such lines, to establish one substantially upon the line recommended by this Bureau. The War Department, after consideration of the subject by its local engineers, laid down a pier and bulkhead line in front of the navy-yard out to which improvements may project. It is desired, inasmuch as the new dry dock authorized by the last Congress will necessarily

extend, with its approaches, out to the line now established, to carry out the wharves, piers, etc., to the same line at all points of the navy-yard. The construction of these improvements upon this line will improve the river by making its cross section more nearly uniform, and will add a very large area to the working part of the yard.

The State of Massachusetts owns the land under water in this harbor, and, in order that these improvements may be carried out to the wharf line established as indicated above, it is necessary that the Government should acquire title to the land under water between the present yard front and the harbor line mentioned. To this end, the Bureau would recommend that application be made to the legislature of the State of Massachusetts, at its next session, to cede to the United States jurisdiction over the lands under water in question. It is presumed that there will be no objection to such cession, inasmuch as the lands are of no value to the State in their present condition, and the Bureau is informed that similar cessions have been made in the case of lands adjacent to the navy-yard.

Such cession should be obtained as early as possible, in order that work upon the new dry dock may not be delayed, or that such work may not be constructed upon lands belonging to the State in advance of proper authority for such use and occupation.

A plan showing the present limits of the yard along the water front, and the pier and bulkhead line now established by the War Department, the cession of the lands between which, under water, is desired, accompanies this report.

NAVAL STATION, NEW LONDON, CONN.

The only object of improvement estimated for at this station at present is for dredging in front of the wharf, \$25,000.

Congress having appropriated at its last session the sum of \$200,000 for coaling facilities at this station, steps have been taken toward making provisions for the storage and convenient handling at this point of about 10,000 tons of coal.

The Naval Coal Board has recommended the storage at this station of a supply of 25,000 tons, and it will, therefore, become an important one for coaling.

As no dredging has been done at this station since it came into the possession of the Government, thirty years ago, and the grading and filling in which was done in its early improvement pressed large quantities of mud and silt from the shore to the borders of the channel, from which a considerable deposit has resulted at and in front of the wharf, it is necessary that this area should now be dredged in order to afford a sufficient depth of water for vessels that can pass up the river for coaling.

The conditions in this river are about stable, and when the dredging has been completed none will be necessary again for many years.

As this is a closed yard and will probably be used in the future only for the purposes of coaling, no other improvements are contemplated at the present time.

NAVY-YARD, NEW YORK, N. Y.

The Bureau submits for your approval recommendations for various improvements at this important navy-yard, herewith enumerated:

Removing crib work and obstructions at Whitney Basin.....	\$100,000
Extension of quay wall at the cob dock.....	82,700
Extending building No. 33 (supplies and accounts storehouse).....	48,000
The erecting shop (wing of building No. 28, steam engineering).....	47,250
Coppersmith shop (steam engineering).....	15,112

Administration building (steam engineering).....	\$37,000
Paving streets.....	50,000
Extending yard sewers.....	18,000
Extending railroad system.....	30,000
Extending electric plant.....	20,000
New roof for building No. 12.....	8,000
New floor for building No. 14.....	12,000
Two officers' quarters.....	14,000
Reconstructing and enlarging building No. 21.....	70,000
Coal-storage buildings and coal-handling plant.....	60,000
Total	612,062

Whitney Basin.—Estimates of \$100,000 for removing crib work, etc., at Whitney Basin include the removal of an old sea wall, crib work, and dredging, in order to enlarge its capacity and open it to the Wallabout Channel, thereby increasing the facilities for the handling of vessels. This improvement is in accordance with the recommendation of the board of officers appointed by the Department to consider the improvement of this feature of the yard.

Quay wall.—The section of the quay wall referred to in the above estimate is one to extend in an easterly direction on the cob dock from the causeway across the Wallabout Channel, which would be a valuable addition to the wharfage of the navy-yard.

Building No. 33.—The extension of building No. 33 proposed is by way of an increase of the storage capacity for provisions and supplies for naval vessels, which is very much needed.

Steam engineering building.—Estimates are submitted for the construction of three buildings for the Bureau of Steam Engineering, which are very much needed.

The building used for erecting purposes by this Bureau is a temporary one of insufficient size, which was constructed several years ago for temporary use.

The coppersmith work of the same Bureau is now done in the foundry, and occupies space which is really necessary for foundry work. A proper building should be provided for the former work.

A building is also needed for the general offices for steam engineering and for the accommodation of the testing and analytical department. These are now located on the second floor of the machine shop, where they are occupying room that is needed for machinery and machine tools; furthermore, the vibration of the building and the dust arising from its use are objectionable.

It is recommended that a small administration or office building be erected in proximity to the group of buildings occupied by this Bureau, but entirely separate from it. It is believed that such an arrangement will be very advantageous and of great value in the operations of this department.

Paving and sewers.—Estimates aggregating \$68,000 are submitted for paving the streets and extending the yard sewer system.

Although this has always been the busiest and most important navy-yard, its streets have been paved to a limited extent only, and it is important that the work done in recent years in this direction be continued until they are in good condition in respect to paving.

Extensions of the sewer system are also necessary in sections where none have heretofore existed.

Railroads.—The railroad system is now being repaired and renewed with rails suitable for regular rolling stock, and extensions which, during great activity in this yard this year were found to be important, it is desired to make under the appropriation now asked.

Electric plant.—A moderate extension of the electric plant for lighting new buildings recently erected and for power for yards and docks purposes is requested.

Storehouse.—Building No. 21, which is a storehouse, is very old and so much out of repair that it should be renewed and made a modern building of fire-proof construction and of larger capacity. Such remodeling will require a strengthening of the old foundations, or new ones, so that the cost of this improvement would amount very nearly to that of an entirely new structure.

Coaling facilities.—A modern plant for the storage of the supply of coal for yard and ship use, and its convenient and economical handling, is very important at this yard, where the facilities for storage are now very poor, and for handling there is practically none.

Cob dock.—The subject of the proper improvement of the cob dock, in order that its land and water area may be used to the best advantage for the work of the yard, is one requiring very careful study. The area of the yard proper is limited in extent, and, unless the cob dock can be made available in some way far more advantageous than at present, the limit of the development of this yard is very nearly reached.

Under the wise policy of this Bureau in its early years, particularly during the long and able administration of Rear-Admiral Joseph Smith, for nearly a quarter of a century the yard was gradually increased from its dimensions as they existed in 1842, when the Bureau was organized, until, after various purchases and additions made from time to time, the yard had grown from 121.12 acres to an area of 221.7 acres in 1868. The Bureau had seen that the New York Navy-Yard was destined to be a great one and that its area was entirely too limited for such development as must follow with the growth of the country, the Navy, and the establishment which must grow up at this metropolis. With this in view the wise policy was instituted of acquiring contiguous land in parcels, as owners could be induced to sell to the Government. This policy gave to the Government a magnificent property. Much of this, when purchased, was entirely unimproved, and included in it a part of the Wallabout Channel, creeks, and low flats, which had but little value at that time. The improvement of this land was carried on continuously until all except the present Wallabout Channel had been filled in and raised very nearly to grade, making a magnificent stretch of property from the present northern limits of the yard to the naval hospital lands on the south.

No sooner had this been effected and the growth of the city of Brooklyn fully surrounded this property than efforts were begun by the city to obtain it, and a large portion of the area between the improved portion of the yard and the naval-hospital lands was allowed to be occupied for a city market, and extensive improvements were made upon it by private interests. In 1890 the desire of the local interests to possess this land had become so great that Congress was induced to pass an act authorizing appraisement and sale to the city of Brooklyn of 15.33 acres. Again, in 1892 these interests were successful in securing the action of Congress granting the appraisement and sale of still further areas to the city. These sales aggregated 42.48 acres.

When the question of the last sale was before Congress this Bureau was opposed to the alienation of any more of the navy-yard lands, and reported a recommendation in opposition to it. When it became evident that such opposition would be unsuccessful, it endeavored to have

the matter compromised by the sale of only one half the area intended. This also was unsuccessful, and the sale as indicated above took place, involving the loss of 27 acres of land. The alienation of this land was aided by the views and recommendations of officers of the Navy, but there can be no doubt that it was an unfortunate step.

Although this transfer occurred but four years ago, we are already met with difficulties in the location and construction of works of improvement which seem necessary to the interests of the service at this point. There are now three dry docks in this navy yard, and the construction of another, which has been recommended by the Board on Dry Docks, and which the Bureau regards as important to be done at no distant day, can be located only with difficulty and probably with great disadvantage to the yard in some respects. The greatest navy-yard in the country will probably be limited to four graving docks, when it should have area sufficient for ultimately laying down three times this number, with all the structures and works of improvement necessary in the repairs and equipment, with expedition, of the largest fleet the Government is likely to have assembled in the great harbor of New York.

During the past spring the matter of the abandonment of almost all, if not all, of the cob dock and its removal, leaving upon its site a large addition to the Wallabout Bay or Channel, was brought to the attention of the Bureau in the form of petitions from the Merchants' Association of New York, the Merchants' Association of Brooklyn, Wallabout Market Merchants' Association, and the United Retail Grocers' Association of Brooklyn, asking the Bureau to give its indorsement to such a project. This scheme was advocated on the ground that the construction of such a basin would be valuable in the interests of the city of Brooklyn, in that it would afford a large and easy access for shipping to the basin recently constructed upon grounds in the Wallabout, purchased by the city from the Government, and also on the ground that it would be a great advantage to the Navy, in that it would greatly enlarge the water area for its shipping, and admit of the construction of piers from the present west shore of the Wallabout Channel.

The Bureau took no action upon these petitions further than to give them some careful examination, deferring any final expression of its views upon the subject until it should have time to study the matter more carefully and conclude what, under all circumstances, would be the advantages or disadvantages to the Government in such work. From such study as the Bureau has been able to give to this matter, it has not seen its way clear to favor any project materially reducing the land area on the cob dock. In view of the limited area in the navy-yard proper, resulting from the transfers of property heretofore alluded to, the Bureau believes that no portion of its lands above water at this station should be alienated or destroyed except for the very strongest reasons and unless such radical changes should be attended with manifestly greater advantages to the Navy than have been presented in its favor, or than are apparent. A small portion of the cob dock at the eastern entrance of the Wallabout Channel could be spared without detriment to the service and would greatly improve the navigation in that portion of the channel in which the city of Brooklyn is particularly interested, and this Bureau did, when such a proposition was submitted to it, report that a small area could be dispensed with and removed by dredging without detriment to the naval service, provided lands about equal in area should be ceded to the Government immediately adjoining the northern boundary of the yard proper.

The Government has, at a large expense, constructed a causeway across the Wallabout Channel, connecting the cob dock with the yard proper near the boundary line between the Government and the city. This causeway has resulted in making the cob dock much more available for the work of the yard than was formerly the case, and it has been in contemplation to render it still further available for the ordinary work of the yard by the construction of a bridge at some other point of the channel. These improvements, with a newly established pier and wharf line on the East River front of the cob dock, one of which could be laid down, adding largely to its area and greatly improving the East River at this point, would very much modify the relation of the cob dock to the yard proper. Such an improvement as indicated upon the East River front would improve the navigation at this point and render less difficult, if not less dangerous, the entrance to Wallabout at its western mouth, where, from the contour of the shore, the currents are irregular and often cause vessels to collide with other vessels or with the wharves.

The Bureau has reason to believe that the question of the removal of the cob dock by dredging and adding its landed area to the river or Wallabout Bay will be pressed upon the attention of Congress at its next session. It can not too strongly urge that any project of this kind be approached with the greatest caution, and that no modification reducing materially the area of the cob dock be assented to unless it can be shown without question that it is to the interests of the Navy that such change be made.

Additional land.—The Government land at the northern extremity of the yard extends beyond Little street, but the State of New York has never taken the necessary legislative action to effect the vacation of this street, and the easement of the public in it to the water front still exists. It is very important for the interests of the navy-yard that this be done, as the slip at the foot of this street is very valuable for use by yard tugs and lighters in loading shipments, etc.

It is recommended that the legislature of the State of New York be asked at the next session to authorize the vacation of this street for public use.

The Bureau also begs to call your attention to the importance of enlarging the area of the navy-yard at this, its northern portion, by acquiring title to the lands adjoining it, bounded by the navy-yard wall, Hudson avenue, and the East River. This tract embraces a triangular-shaped area of about 12 acres in extent. The land does not appear to be very valuable for commercial purposes, and it is thought that it might be obtained at a very reasonable price. It would be a valuable acquisition to the yard, which has already approached the limit of its development for lack of space. The alienation of lands upon the southern boundary of the yard, referred to elsewhere in this report, has greatly restricted the possibilities of the yard, and it is important that some of the area lost to it by sale to the city of Brooklyn should be replaced by purchases elsewhere, or by regaining possession of some of the same land.

A plan accompanies this report showing the lands recommended to be purchased.

An estimate of cost to prepare the 12 acres referred to above, by the erection of a suitable boundary wall upon the north and reducing the space to the grade of the yard, has been made, and the price for both would aggregate about \$200,000. No estimate of the cost of the land itself is made herein, as it is very difficult to arrive at a correct valua-

tion in the absence of actual sales of recent date in the vicinity, but the additional water front to be attained by its purchase, as well as the additional territory for improvements which are very important, will warrant the Government in paying what would be regarded as a very large price for it.

If the acquisition of the land be authorized by Congress, I would recommend that the Department be empowered to acquire title by condemnation if, in its opinion, the interests of the Government would be best subserved by such process.

NAVY-YARD, LEAGUE ISLAND, PA.

The works of improvement for this yard, which the Bureau submits for the Department's approval, are the following:

Dredging and filling in Delaware River front.....	\$50,000
Extension of reserve basin.....	125,000
New roads and walks.....	15,000
Extension of drainage system.....	7,000
Office building for commandant.....	53,735
Water-closets.....	4,712
East wall of causeway.....	73,920
Yard railroad system.....	20,000
Artesian well.....	5,400
Four officers' quarters.....	25,000
Locomotive crane and track for dry dock.....	65,000
Reserve basin retaining wall.....	100,000
Storehouse for vessels' equipment.....	3,000
Continuation of sea wall west of dry dock.....	50,000
Plate-bending shop (construction and repair).....	75,000
Coal-storage building and coal-handling appliances.....	50,000
Total.....	755,767

Dredging.—It is desired by the Bureau that the entire Delaware water front of the navy-yard which is improved for the operations of the yard may be dredged to a depth of at least 28 feet at mean low water, with a limited area having a depth of 30 feet at mean low water, for the accommodation of the heaviest vessels in the Navy. It is proposed to deposit the material which will be removed upon the lowlands of the island behind the impounding dikes. A considerable portion of this front has never been dredged to the depths mentioned, and it is desirable that the entire amount of dredging contemplated by the above estimate be made at once. The need of more room for the safe berthing of vessels was demonstrated during the past summer, when many were fitting out at this yard.

Reserve basin.—Under contracts previously made, a reserve basin has been commenced in the back channel at this yard west of Broad street, and considerable progress has been made toward its completion. Much remains to be done in order to make it of the capacity originally contemplated when the project was laid down, and of sufficient proportions for the proper accommodation of vessels in ordinary. The basin has already been availed of to considerable extent for this purpose, and at the present moment more room is very much needed. It is hoped that this appropriation may be made, and that the work upon it may not be interrupted until its completion. A basin of the full dimensions proposed is regarded as very important at the present time, when the Navy, in the matter of its vessels, is very large and many are going out of commission, which must be properly stored and cared for at some suitable place, preferably in waters which are fresh and where little corrosion of the outer skin will occur.

Roads and walks.—The improved area of the yard is being constantly added to by the deposit within the dikes of material dredged from the Delaware front and from the site of the reserve basin, and as these areas are added to the portion of the yard fit for improvement and the ordinary uses, it is necessary that the roads be laid out and properly surfaced, and walks constructed. The material as it comes from the river and basin is not fit for ordinary traffic.

Office building.—The offices of the commandant of the yard and his executive are now in a small frame building which was erected for temporary use about twenty-five years ago, and does not afford proper and convenient accommodations for these officers and the office force. The foundations for a suitable and permanent building for this purpose were laid in the yard soon after the present building was erected, but no attempt has been made to rear the superstructure in the absence of a special appropriation by Congress for the purpose. It is in every way fit that a good, substantial, ample, and fireproof structure should be erected for the commandant and his aids for the transaction of the public business. This building is also necessary to provide proper and safe storage for the records in a situation where they are safe from destruction by fire and convenient for reference.

Causeway wall.—The appropriation asked is for the purpose of preserving the causeway across the back channel, which is now supported upon its eastern side by a temporary structure which is subject to decay and frequently fails at different points. It has been in contemplation to entirely fill in the back channel upon the east side of this causeway, but that seems to be a matter still in the distant future, and in its absence it is necessary that a permanent retaining wall should be constructed.

Railroad.—There is now no railroad system in this navy-yard, and, therefore, no railroad connection with any of the trunk lines of the country, which is very important in a working navy-yard wherever such connection can be made. It is proposed to lay down a system of railroad tracks of standard gauge throughout the navy-yard, equipped with rolling stock and connected at the yard gate with one or more railroads, and no doubt the railroad companies having branches in the vicinity will be glad to run their tracks to the yard and make such connections. Such a road system is very important and should be laid down in all working navy-yards, not only for the local traffic, but in order that supplies may be delivered from railroad systems outside without breaking bulk.

Artesian well.—Under appropriation by Congress an artesian well was sunk at this yard and has proved very successful in the matter of the quality of water and also the quantity. The latter, however, is not sufficient for all the purposes of the yard, and it should be supplemented by another. The yard has no connection with the water system in the city of Philadelphia, which renders it important that wells affording ample water of good quality should be sunk.

Officers' quarters.—This navy-yard is isolated from the city, and it is important that officers in charge of departments or having important duties at the yard should be quartered within its limits. An estimate is submitted for accommodations for four officers, at a cost of \$25,000. If this appropriation is made the four officers now quartered in the city of Philadelphia, at considerable annual expense under the appropriation for general maintenance, may be transferred to the navy-yard and be present for their duties at all hours, day or night.

Dock crane.—The present dry dock is without any equipment in the

way of a crane for lifting heavy objects, and the construction of another dry dock at this yard, for which Congress has already made provision, renders it desirable that a 40-ton locomotive crane should be provided and connected by tracks with both dry docks. This installation would be similar to those provided at several other navy-yards, where they have proved very successful and important adjuncts.

Reserve-basin wall.—The plans for the reserve basin contemplate that it shall be bounded by permanent quay or retaining walls, forming wharfage for vessels in reserve. At the present time, in the incomplete condition of the basin, this object is attained by approaches or tramways having small cribs for wharves at their ends, to which vessels are secured. These are temporary structures of wood, and limit the available area in the basin. It is proposed that as the work upon the reserve basin proceeds the construction of the quay wall shall follow, making the basin permanent and convenient for all its purposes, as intended.

Storehouses.—The plans for this yard, which were matured by a board of officers some years ago, provide, in connection with the reserve basin, buildings for the storage and care of the heavier articles of vessels' fittings and stores, such as anchors, cables, hawsers, and other appurtenances; also wet provisions and oils. The storage for articles of this kind at the League Island Navy-Yard is almost nothing, and it is important that buildings particularly adapted to this purpose should be provided at convenient points at once. Several vessels with large outfits have already gone into reserve at this yard, and the buildings for the landing and care of these articles are insufficient, and the deficiency should be supplied.

Sea wall.—Various sections of sea wall have been constructed upon the Delaware River water front from time to time, under special appropriations. The location recently recommended for the new dry dock is to the west of the improved portion of the water front, and it is necessary to begin at an early date the construction of a sea wall extending in the same direction. An estimate is submitted for this work.

Plate-bending shop.—The Bureau of Construction and Repair has need of a shop at this yard for plate bending. No shop of this character has ever been provided at this yard, and, with the improvement of the yard in various ways and the storage of vessels at this point, which is now the settled policy of the Department, it is required that the facilities for the repairs of vessels should be sufficient for the ordinary work of the yard.

Coaling facilities.—The facilities for the storage and handling of coal at this station are of the most limited character, and, in accordance with the policy of the Department to provide sufficient facilities of this kind at the yards and stations on the Atlantic coast, it is requested that an appropriation of \$50,000, which contemplates a supply of a moderate quantity of coal, may be made.

New buildings.—While several of the buildings at this navy-yard are of permanent construction and of excellent quality, and well adapted to their purposes, many of them are mere temporary structures of wood, erected many years ago, when the naval establishment in these waters was transferred from the old Philadelphia Navy-Yard in the city to League Island, and are dilapidated, in bad condition in many respects, and are dangerous in case of fire. These buildings should be renewed so as to be made fireproof, and larger, lighter, and better adapted to their purposes in every way. The Bureau has not been able to prepare preliminary studies and estimates of cost to make this change at this

time, but it hopes to lay this matter before you during the coming session of Congress, in order that a beginning may be made in the direction of better and safer structures.

NAVY-YARD, WASHINGTON, D. C.

The appropriation asked by way of improvement of the Washington Navy-Yard comprises the following objects:

New steel roof and repairs to pattern shop, building No. 3.....	\$21,000
New steel roof and repairs to copper rolling mill.....	17,000
Extension to the north gun shop	15,000
New steel roof and extension of store No. 12.....	10,000
Extension of storehouse for guns.....	35,000
Shop and office building for construction and repair.....	100,000
One officer's quarters.....	7,000
Total	205,000

New roofs.—This yard, which of late years has been a gun factory, has required for its work many repairs, modifications, and extensions of the buildings in the yard, and many of the roofs which were of timber have become unsafe from decay, and they are accordingly being renewed with modern steel structural work. Estimates are submitted for several items of work of this class.

Storehouse for guns.—A storehouse for guns is now under construction, having been authorized by the last Congress, but recent events have shown that it will be entirely too limited in area to accommodate the guns now necessary to be stored at this yard, and an estimate is submitted for extending it to double the size now contemplated.

Quarters.—The Bureau of Construction and Repair has installed in this yard, under the authority of Congress, an experimental model tank, and work in connection with this structure, and the objects for which it was erected, require a considerable plant and shop and office room by this Bureau. An officer of the naval constructor corps is to be detailed to the charge of its work here, and should be quartered.

Construction and repair shop.—At the request of the Bureau of Construction and Repair, this Bureau submits above an estimate for the construction of a building suitable for the purposes named, of modern fireproof construction, in order that its work at this point may be concentrated in one building which shall be amply convenient and safe for its purposes. In accordance with the same request an estimate is submitted for one officer's quarters for the accommodation of the officer in charge of such work.

NAVY-YARD, NORFOLK, VA.

Estimates for the improvements of the Norfolk Navy-Yard are submitted herewith:

Concrete and granite dry dock.....	\$1,500,000
Quay wall for fitting out basin	100,000
Shipfitters' shop (construction and repair).....	100,000
Yards and docks building for electric plant, plumber and machine shop.....	75,000
Blacksmith and coppersmith shop (construction and repair).....	50,000
Storehouse for torpedoes	75,000
Two officers' quarters	10,000
120-ton floating derrick	70,000
Grading and paving streets, and for sewers.....	20,000
Total	2,000,000

Dry dock.—The Norfolk Navy-Yard, from its situation upon waters near the Chesapeake Bay, with an ample supply of skilled labor in the vicinity, and in direct connection with important lines of transportation, will continue to be one of the most important upon the Atlantic coast. Congress, at its last session, provided for improving the navigation between the waters of the bay and the navy-yard by the construction of a channel of 30 feet depth at mean low water, and there is, therefore, every reason why this yard should be provided with a permanent dry dock of the largest size, sufficient to accommodate any present or prospective vessel of the Navy. The estimate for this dock contemplates one which shall be permanent and substantial in every respect, and free from the rapid deterioration, both from the marine worm and the climate, which prevails in this locality. Dry docks constructed of timber in this latitude decay very rapidly, are expensive to maintain, and become unsafe if extensive repairs are neglected. It is hoped that Congress may see proper to appropriate for a modern dock of the most substantial character at this station at its next session.

Basin.—There is located in this yard a basin which was constructed for the storage and preservation of timber. It is surrounded by a shallow but substantial quay wall and the depth of water is shallow. It has long since ceased to be used for the purpose originally intended, and the space which it occupies is very much needed for the purposes of the yard. It often occurs at this yard that the wharfage or space for berthing vessels on the water front is entirely inadequate, and during the present war vessels upon which repairs were carried on have been moored abreast each other at the wharves, the work carried on at great disadvantage and at greater cost than would obtain under other circumstances. This basin would make a valuable addition to the wharfage room of the yard if it were excavated to a sufficient depth for floating in any vessel of the Navy, and bordered with a quay wall of proper construction for a deep basin, and I recommend that an appropriation be made for this purpose.

Ship fitters' shop.—The ship-fitters' shop now in existence at this yard is too small to accommodate all the tools needed for carrying on the work of the Bureau of Construction and Repair, and it is incapable of enlargement. It is very desirable that a new shop be erected at the south of the present one, adjacent to the timber basin, which can be fitted with modern appliances and a sufficient supply of machinery, as desired by the Bureau to occupy it.

Construction and repair shop.—There is a building at the yard used by construction and repair for a blacksmith shop and plumber shop, but it is too small for the purpose, being very badly crowded, and does not accommodate all the tools and workmen necessary for the work in hand. It is recommended that a new structure be erected for the blacksmith and coppersmith work, and the plumbers' department should be transferred to the present ship-fitters' shop, if the new ship-fitters' shop recommended above be authorized.

Torpedo storehouse.—The Bureau of Ordnance has requested of this Bureau that it will include in its annual estimates a sum sufficient for the construction of a fireproof storehouse for the storage of torpedoes and torpedo outfits. There is no building at this yard which can now be utilized for this purpose to any considerable extent, and the construction of such a building for the accommodation of a proper supply of these objects is considered very necessary at this yard.

Officers' quarters.—An estimate of \$10,000 is submitted for the con-

struction of two officers' quarters at this yard. These are very much needed at the present time, and during the war, when a great deal of work was being carried on in the yard, particularly by the Bureaus of Construction and Repair and Steam Engineering, it was found that the presence of additional officers in the yard at all times during the day and at night, when work was also in progress, would have been of great advantage. So urgent did the presence of these officers seem that it was in contemplation to fit up temporary quarters for them in one of the storehouses, but the funds at the command of the Bureau for work of that character did not admit of it.

Floating derrick.—This Bureau installed some years ago at the Norfolk Navy-Yard a set of shear legs, operated by machinery, of a capacity of 100 tons. These are very useful appliances and have been of great service, but they are fixed in position and can only be used at a particular point upon the water front and only for the deposit of any weight immediately in the rear of the dock coping. There is great need at a working yard of a crane of about the same capacity which can be utilized at any part of the water front or in the waters of the channel beyond the front. A floating crane of about 120 tons' capacity is recommended to be provided in the equipment of this yard which will admit of taking boilers or guns from vessels at the wharf or lying moored in the channel, or in any waters in that vicinity, and deposit same at any point of the yard desired.

Grading and paving.—A small sum is recommended for continuing the grading and paving of the streets and for the extension of the sewer system.

NAVAL STATION, PORT ROYAL, S. C.

Improvements aggregating an estimated cost of \$145,000 are recommended as objects of appropriation by Congress for this station, as follows:

Yards and docks workshops	\$54, 000
Paint shop and store for combustibles	13, 000
Extension of storehouse.....	30, 000
Sawmill and boat shop (construction and repair)	30, 000
Shipwright's shed (construction and repair)	6, 000
Grading and drainage.....	6, 000
Dredging plant for dock entrance	6, 000
Total.....	145, 000

The above-named improvements are desired to supplement those already made and others appropriated for by the last Congress in order to fit the station for ordinary repairs to vessels.

The storehouse, sawmill, boat shop, and shipwright's shed are especially requested by the Bureau of Construction and Repair by way of increased facilities for its work at this station. The dredging plant estimated for is one of very small capacity and intended merely for use in removing the silt which accumulates at the dry-dock entrance and interferes with the handling of the caisson in docking vessels, the removal of which is quite expensive when contracted for, as there is no plant in the immediate vicinity belonging to private parties. The more extended dredging operations are best accomplished by contract.

NAVAL STATION, KEY WEST, FLA.

The following improvements are recommended for this station, namely:

Sea-wall light	\$3, 000
Sidewalks	1, 520
Two officers' quarters	8, 000
Purchase of additional land	100, 000
Total	112, 520

During the war of this year this small station was taxed to its utmost in every respect.

The entire area of the station is only about 3 acres, and it was found to be entirely insufficient when Key West was made a naval base, and it became necessary to rent property adjoining the station for the storage of supplies for naval vessels.

When the fleet left this point for action, portions of their outfit, which had to be left on shore, were stored at Fort Taylor upon property belonging to the War Department, at great inconvenience to the latter.

Additional lands.—It is of the highest importance that additional lands be purchased and added to the station, in order that there may be proper storage for supplies for ships in commission, for the care of certain portions of the outfit which must be landed when vessels are stripped for action, and for improvements which are needed to facilitate the work of the several bureaus which may become necessary. There are lands immediately adjoining the station which can be procured by purchase or condemnation, and would make a very valuable addition to the station—in fact, one that seems absolutely necessary. The plan accompanying this report shows nearly every square foot of the station covered with some structure or other, and others have been erected upon lands belonging to the Treasury Department.

Quarters.—The accommodations for quartering officers are very meager, and quarters for two more at least should be provided.

NAVY-YARD, MARE ISLAND, CAL.

The following is a schedule of the improvements recommended to be appropriated for at this yard:

Quay wall, extension	\$72, 000
Crematory	7, 500
Tools for yards and docks machine shop	4, 000
Extension and renewal of railroad and equipment	20, 000
Fire-engine house	7, 000
Storehouse (supplies and accounts)	40, 000
Block and cooper shop and varnish room (construction and repair)	16, 000
Timber shed (supplies and accounts)	26, 250
Apartment house for officers	15, 000
Boat shop (construction and repair)	72, 000
Machine shop extension (construction and repair)	34, 000
Storehouse for guns	22, 000
Shipwrights' shop (construction and repair)	75, 000
Machine shop and foundry (supplies and accounts)	150, 000
Dredging channel and anchorage ground	100, 000
Sidewalks and roads	5, 000
Grading and paving streets	6, 000
Moving back ferry slip	80, 000
Grading yard	100, 000
Total	851, 750

Quay wall.—Appropriations have been made from time to time for a quay wall upon the water front of the yard, until the stretch from ferry slip to the northern end of the yard is fully provided for. The estimate now submitted is to complete that section from the ferry slip south to near the entrance of the proposed new dry dock. This will give a permanent sea wall throughout the working part of the yard as it now exists.

Crematory.—The crematory is very much needed for the purpose of consuming waste material, saving a considerable item of expense now incurred in collecting and transporting this material to a distance.

Railroad.—A considerable portion of the railroad track in the yard needs renewal, and extensions are necessary to reduce the cost of transportation in the yard and to dispatch business, which is now delayed by the slow system of teaming.

Fire-engine house.—There is no fire-engine house proper in this navy-yard. The engines are kept in one place, the horses in another, and the men belonging to the fire department sleep in another. It is important that the entire department should be concentrated in one building in order that it may be prompt in response to calls, and so rendered more efficient.

Storehouse.—An additional storehouse is needed for the uses of the Bureau of Supplies and Accounts. At present there is not sufficient room for properly caring for all the stores and materials under the charge of that Bureau.

Block and cooper shop.—The block and cooper work of the Bureau of Construction and Repair is now carried on in a joiner's shop, which building is greatly overcrowded, and it has become necessary to provide quarters for this work in another building, to include a varnisher's shop. The Bureau of Construction and Repair regards these improvements as of special importance.

Timber shed.—A large quantity of timber in this yard is left out in the open, exposed to the weather, or is sheltered under old sheds temporarily erected from time to time. These sheds take up a great deal of valuable ground, and it is desired to provide a new and suitable building for this purpose, where the material referred to can be stored and properly cared for.

Apartment house.—At this yard an apartment house for junior officers and officers upon temporary duty at the yard is very much needed. The yard is isolated from the town of Vallejo, and in the latter the accommodations are not good, and often none can be found. The necessity for an apartment house has long been felt, and it is recommended that one be provided.

Boat shop.—The Bureau of Construction and Repair reports that a new boat and joiner's shop is necessary; that the present shops are entirely inadequate and far removed from the lumber sheds and saw-mill.

Machine shop, construction and repair.—The same Bureau reports the present machine shop as entirely too small to accommodate the tools which are absolutely necessary, the fittings, auxiliary machinery, etc., removed from shops being overhauled, and the shop is not fitted so that a new traveling crane can be installed. It recommends that these accommodations be extended by constructing a building parallel with the present shop and connected with it by wings.

Storehouse for guns.—In the ordnance department of the yard there is no proper or sufficient place for storing guns. A building of this kind is needed at this yard and an appropriation for the purpose is

requested, in which request the Chief of the Bureau of Ordnance concurs.

Shipwrights' shop.—A shipwrights' shop is recommended. The shops of the shipwrights, sparmakers, calkers, and riggers are scattered through several buildings occupying space needed for other purposes. They are not well arranged, and it is desired by the Bureau of Construction and Repair that a building may be erected especially designed for these classes of work, in which all can be concentrated with advantage and economy to the service.

Machine shop and foundry, steam engineering.—The Bureau of Steam Engineering is now occupying buildings at the extreme northern end of the yard, a long distance from the dry dock, in a situation which is not well adapted for carrying on the works of this Bureau with dispatch and economy. It is very essential that the buildings of this Bureau in which its important work is done should be at a point nearer to the dry docks and the working part of the yard. The Bureau of Steam Engineering has addressed to you a letter setting forth the disadvantages it experiences in the present location of its buildings, and submitting for your approval a proposition for the construction of new buildings to the south of the present site and nearer the present dry dock and the one proposed, which has received your approval, and which you have directed this Bureau to provide for in its annual estimates. The buildings vacated by the Bureau of Steam Engineering can be used with advantage for the purposes of other bureaus for work which can be carried on in that part of the yard.

Dredging.—Under appropriation made by Congress for the fiscal year, the channel between the navy-yard and the bay has been dredged, but not to the full extent contemplated by the project, and a further appropriation is necessary to make the channel of the dimensions necessary and to provide an ample anchorage ground in front of the yard, where vessels can lie afloat at all stages of the tide.

Ferry slip.—For several years estimates have been submitted for moving back the ferry slip on the yard front to bring it in line with the established quay wall and do away with the projection beyond its front, which is now an inconvenience and results in a large deposit of silt along the water front. It is desired that this obstruction in the stream may be removed and a considerable expense in dredging, resulting therefrom, avoided.

Grading.—In order to establish the buildings of the steam engineering plant upon the proper site in the vicinity of the dry docks, as previously referred to, and for the improvement of the part in the vicinity of the new dry dock proposed, a considerable amount of grading will be necessary, and an appropriation for that purpose is requested.

Navigation to Mare Island.—The dredging operations at this yard completed this year, and those contemplated under the estimate for dredging channel and anchorage ground, included in the preceding estimates, are for the purpose of making ultimately a good navigable channel of 30 feet in depth at mean low water from the navy-yard to the Straits of Karquines, a distance of about $2\frac{1}{4}$ miles. This will make a channel to admit the passage of any vessel of the Navy at any hour, but between the latter point and the harbor of San Francisco there is a shoal lying in San Pablo Bay. This shoal, between the Straits of Karquines and the Golden Gate, off Point Pinole, Point Wilson, and Lone Tree Point, where the depth of water is less than 30 feet, is at one point only 21 feet in depth. A battle ship could pass over it only at high tide.

In order to get a depth of 30 feet of water at low tide throughout

this section, which is about 5 miles in length, it would cost for a channel 300 feet in width about \$200,000, and for a channel 500 feet in width, about \$350,000. No other shoal which would be an obstruction to navigation exists between the Golden Gate and Mare Island. It is important that this shoal should be removed, in order that the Mare Island Navy-Yard may be accessible for all vessels of the Navy at all stages of the tide. The Bureau is not aware that the improvement of the navigation over this shoal has been made the subject of study by the Coast and Geodetic Survey, or by the War Department, which has charge of works of improvement in navigable rivers. It has been asserted that it is impracticable to make a permanent improvement through this portion of the bay, and that to keep a channel of this width open would require a very large annual expenditure for dredging. It is necessary, in the Bureau's opinion, to have a navigable channel of a continuous depth of 30 feet at mean low water from the sea to the Mare Island Navy-Yard, if it is to remain the principal navy-yard on the Pacific coast. If this improvement of the navigation can be made permanent at the expense indicated, or can be maintained at a moderate annual expense, it should be made.

If keeping the navigation open for the depth stated above is impossible without a very large annual expense, amounting to several hundred thousand dollars, then the Government should take early steps to establish a navy-yard on the waters of San Francisco Bay at some point where such difficulties will not be encountered, where the yard will be safe from an attack from fleets on the sea, and where a permanent depth of navigation of 30 feet can be had between it and the sea. The establishment at the Mare Island Navy-Yard is a very valuable one in many respects. The Government has spent a great deal of money there, and is now spending large sums in repairing the damages occasioned by the earthquake of March last, and in various works of improvement, including the construction of a dry dock of the largest class, to cost in itself nearly a million dollars; also the construction of a coaling station, which is ultimately to have a capacity of 25,000 tons and will cost a quarter of a million dollars.

It is important, therefore, that the question of a proper navigable depth between it and the sea shall be determined at once. The Bureau would recommend that the matter be laid before Congress, and that steps be taken without delay to effect an improvement giving the depth required, and, in view of its great importance, that appropriation for a channel through San Pablo Bay 500 feet in width, at a cost of \$350,000, be made under "Public Works" of the Navy Department, in the event that such an improvement can not be effected at once under the laws governing the improvements of harbors under the cognizance of the War Department.

NAVAL STATION, PUGET SOUND, WASH.

A few items of improvement are submitted herewith for this station, as follows:

Pump and boiler house for waterworks	\$3, 000
Purchase of additional land near water-supply springs.....	1, 000
Yard water-closets	6, 000
Continuing clearing and grading station	12, 000
Floor for construction and repair shop.....	8, 000
Narrow-gauge railway system.....	3, 500
Extension of boiler room and steam plant for yards and docks	20, 000
Total	53, 500

This station contains a dry dock of the largest capacity, machine shop for construction and repair, general storehouse, and a machine shop for the Bureau of Steam Engineering is provided for, so that the yard is fitted for ordinary repairs to the vessels of the Navy. The few objects above enumerated are considered important for improving the station in some respects, which will add to its efficiency and facilitate the work of the several bureaus. No extensive improvements are contemplated at present, unless it should be the desire of Congress to very much increase the establishment at this point and do a considerable portion of the work for the Navy upon this part of the coast.

Moderate facilities are valuable at this station, but if it be important that this country equip a first-class naval station or yard in this vicinity, near the limit of its boundary, which the Bureau believes, then another site should be sought which combines the essential requirements of such a yard in a nearby population supplying enough skilled labor, a market with supplies conveniently and quickly available, and direct railroad connection with a trunk line for the quick and economical transport of material.

The present site possesses none of these desiderata. The nearest city of considerable size is 15 miles away. Communication with the rest of the world is by water carriage over this distance, and the little work done at the station has been under disadvantages. When a naval vessel has been docked and repaired, skilled men have been supplied and transported at great expense from the Mare Island yard.

Under these conditions it is doubtful if it be wise to build up a very large establishment at this station and provide for more than docking and slight repairs, unless no suitable site near one of the large cities and railroad communications can be had.

REPAIRS AND PRESERVATION.

The estimate of the Bureau for repairs and preservation at navy-yards and stations is \$450,000. This is \$50,000 in excess of the amount appropriated for the past fiscal year. The demands upon this appropriation are many and varied, and include repairs to all the buildings in the navy-yards, all the officers' quarters, wharves, landings, dry docks, water and gas works, electric-light works, sewers, streets and sidewalks, and many others which are constant and imperative, and it has been found extremely difficult in the past to keep the yards and stations in a state of efficiency in all respects under the appropriations heretofore made. As the yards and stations are improved and developed, and new dry docks, buildings, and other works are constructed, the annual cost of necessary repairs must increase each year. The Bureau was very much embarrassed during the early months of the present war for lack of funds for this purpose, and had not Congress made a special appropriation for this object in the deficiency bill, the service would have been very much embarrassed in consequence.

It is requested that the entire amount estimated may be granted by Congress.

GENERAL MAINTENANCE.

The estimates submitted under this head aggregate \$350,000. They are \$50,000 in excess of the amount appropriated by Congress for the past fiscal year. The remarks in regard to the importance of a larger appropriation for repairs and preservation apply with equal force to general maintenance. The expenses are largely of a contingent nature. They include freight, transportation of materials and stores, maintenance of fire apparatus, machinery of all kinds and attendance on

same, purchase and maintenance of teams, tools, stationery, furniture for houses and offices, coal, lights, incidental labor, etc. The embarrassment in attempting to keep up the efficiency of the yards and stations under this appropriation is even greater than that in the case of the repairs and preservation of the yards, and the entire amount estimated is absolutely necessary for the maintenance of the yards in a fair state of efficiency. Congress appropriated \$50,000 in the deficiency bill for extraordinary expenses under this head during the war of this year.

CONTINGENT, YARDS AND DOCKS.

The estimate under the head of contingent, yards and docks, \$20,000, is for expenses of an unforeseen character which may become necessary through damages by fire, floods, or other extraordinary causes, and only so much of it as is absolutely necessary is used for the repairs of such injuries, the balance being allowed to revert to the Treasury.

The total of estimates of the Bureau submitted for the fiscal year 1900 aggregates \$6,347,421.23, as shown in the accompanying summary.

Summary of estimates for 1899-1900.

Improvements	\$5, 433, 599.00
Repairs and preservation.....	450, 000.00
General maintenance	350, 000.00
Contingent	20, 000.00
Civil establishment at yards and stations.....	83, 442.23
Support of Bureau, salaries	10, 380.00
Total	6, 347, 421.23

YARDS AND STATIONS ON THE PACIFIC COAST.

The western coast of the United States stretches from San Diego on the south to Puget Sound on the north, a distance of 1,250 miles. The nation has one navy-yard and one naval station upon this coast, the latter at its extreme northern limit.

The navy-yard at Mare Island is south of central of this stretch, and lies upon waters connecting with the great San Francisco Bay, upon which is situated the populous and wealthy city of San Francisco. Its general location is the best upon the Pacific coast from a strategic standpoint, and is an excellent one with reference to the markets for labor and supplies, upon which depend so much the efficient condition of the navy-yard and its economic results, but it yet remains to be demonstrated that the selection of its precise situation upon Mare Island strait was a fortunate one. No battle ship or heavy-draft cruiser has yet approached its wharves, and while it is possible for one to do so under favorable conditions as to time and tide, it is not probable that the venture will be made until the physical state of the navigable channel between San Francisco Bay and its docks is very materially improved.

The *Oregon*, which was built in San Francisco, was not sent to the Mare Island Navy-Yard to fit for sea because of the risks of navigation, and was compelled to go to the Puget Sound naval station, 800 miles north, to be docked. A dock of the largest class is projected for Mare Island, and the navigation to it must be easy and safe at all times before it can be fully useful to the service. The Government could construct the amplest docking facilities on San Francisco Bay, but in any event this bay is 450 miles north of the southern limit of our territory on this

coast, and it is quite as important to have a station for coal and repairs at this limit as at the northern one.

While it may be in the distant future when so large a naval force is maintained on this coast as upon the Atlantic, it must be evident that the growing interests of the country upon the Pacific in Alaska, Hawaii, Samoa, and our own territory, and trade and other relations with the Pacific Central and South American countries will be attended with more of a naval establishment upon its shores than we have ever before maintained there, and in the event of complications requiring a demonstration of force the dock yard establishment must be equal to the situation.

If this nation shall own or control no waterway across the American isthmus, the necessity for the maintenance of a stronger naval force permanently assigned to these waters, to be ready for use at once, rather than depend upon the tardy transit of war vessels around Cape Horn, seems evident.

I recommend that the subject of the establishment of a naval coaling and repair station upon or near the southern limit of our Pacific coast, and its definite location, be committed for study and report to a board of experienced and able officers, competent to properly weigh all the conditions that affect and enter into so important a problem.

WATCH FORCE AT NAVY-YARDS.

Congress makes annual appropriation in the naval bill for the pay of watchmen at navy-yards and stations. The expenditures under this head for the fiscal year 1897 were \$38,627.77. The expenditures for the same purpose during the fiscal year 1898 were \$36,511.97. The estimates received from the navy-yards and stations for the same purpose for the fiscal year ending 1900 aggregate \$51,610.80. At those less important stations, where the Marine Corps maintains no guard, it is necessary that this Bureau should provide sufficient watchmen to entirely guard the public property; but at all the yards and stations of the country, with a very few exceptions, an efficient and ample guard is maintained by the Marine Corps. The Bureau is of the opinion that it would be greatly to the advantage of the naval service, in the matters of efficiency and economy, if the police duty at the yards were done by the Marine Corps and the watch force under the Bureau of Yards and Docks at these stations disbanded. Police duty is one of the functions for which the Marine Corps exists, and it seems in every way practicable that the police duty at all the yards where marines are stationed should be performed by the officers and enlisted men of this corps. The yards and stations are military establishments, and it is appropriate, proper, and best that the guard should be a military one. I have to recommend that the Department establish such a system for all the police duty necessary at the navy yards and stations where detachments of the Marine Corps can be maintained.

As a matter of fact, much of the police duty at the yards which was formerly done by watchmen is now performed by the Marine Corps. It has been attended with excellent results, and the extension of the system to take in all the yards and stations indicated above would be no experiment, and would result in a considerable diminution of the annual expenses for guarding public property.

COALING FACILITIES.

The assembly of large numbers of the vessels belonging to the Navy at various points before and during the war with Spain emphasized

the importance of having large supplies of coal available for quick delivery to them. At a few ports it is possible to obtain large supplies, at short notice, for coaling a fleet; while at others it is necessary to have a considerable quantity stored for use at any time, with storage capacity for a large amount, to enable the wants of the service to be anticipated sufficiently to avoid detention. These stations should be not only ample in the matter of storage capacity needed at various points, but the provisions for handling the coal should be of such design and character that it can be effected with the smallest cost and most expedition.

The coaling facilities at the navy-yards and stations, as they now exist, are meager in capacity and crude, expensive, and slow in the methods of handling.

Reference has already been made to the ample and efficient plants being constructed at Key West and Dry Tortugas. Large supplies capable of being furnished rapidly to vessels are of the highest importance when a fleet is assembled in these waters for any purpose, either warlike or peaceful. Isolated from the mainland, and therefore without railroad communication, and lying as outposts in these waters, it is very desirable that the plant be capable of containing a large supply.

For the purpose of being well advised upon this subject, the Department constituted a naval coal board, making it its duty to examine, report, and recommend as to what facilities should be provided upon the Atlantic coast from Port Royal, S. C., north. This board made an exhaustive and valuable report upon the subject and its conclusions and recommendations are regarded as of great value.

Following the line of its recommendations, the Bureau has submitted estimates for enlarging facilities at some of the yards and establishing practically new ones at others, and it is believed that the appropriations recommended should be made at the next session of Congress, in order that the service may at an early day be well supplied with these necessary provisions.

Very much more ample and better coaling facilities than now exist upon the Pacific coast ought to be established soon, and when a site for the works in San Francisco Harbor has been determined upon, the Department should receive the authority of Congress for constructing a very large plant there, upon the scale recommended by the coal board for those waters, because of the remoteness of this base from the sources of good coal for naval use.

CORPS OF CIVIL ENGINEERS.

I beg to call to the attention of the Department and Congress the importance of an organization of the Corps of Civil Engineers upon a somewhat different basis from that now existing. The corps as it exists at the date of this report numbers eighteen. All these belong to the one and only grade of full civil engineers. I think the manner of admission to the Corps of Civil Engineers should be established by act of Congress, and that the requirement should be that appointments be made only after a competitive examination, if from civil life, or after careful selection, if from the Naval Academy.

There should be added to the corps the grade of assistant civil engineer, in order that young men may be appointed to the lower grade first and be promoted to the grade of full civil engineer as vacancies occur in the latter, after some years of experience and after a further examination to test their fitness for such promotion.

I would recommend that the number of assistant civil engineers be not fixed by law, but be variable, at the discretion of the President, to suit the requirements of the service. The corps as it now exists is not sufficiently large for the prosecution of the work of designing, constructing, and maintaining the public works in the Navy without calling to its aid many young civil engineers from private life to temporary appointments at the various yards and stations, under various titles of draftsman, transitman, leveler, rodman, etc., who are paid from the appropriations made by Congress for works of improvements upon which they are engaged. Such assistants, being commissioned officers, would have the requisite authority and status to perform any duty assigned to them in connection with public works, and take charge of the same and represent the civil engineer of the yard in his absence. There would also be the manifest advantage of having young officers in training in the subordinate grade in the line of public works under the cognizance of this Bureau, to fit them in an especial degree for the vacancies occurring in the grade of civil engineer. Such commissioned officers would probably have a greater interest in the work than temporarily employed civilians, thus insuring a more efficient administration and better results.

The introduction of such a grade would be without additional expense to the Government, as its establishment would obviate the necessity of the employment of an equal number of young engineers under the several ratings mentioned above.

The importance of some such reorganization has been laid before the Department in previous years by a former chief of this Bureau, Commodore N. H. Farquhar. At that time the proposition contemplated the selection of the appointees from graduates of the Naval Academy, who were to be selected from those showing an aptitude and preference for the profession of civil engineering. It was also contemplated that they should be given a post-graduate course in civil engineering at some engineering school of good repute in this country, and upon taking the degree of civil engineer from such institution they were to be detailed to the Corps of Civil Engineers. At that time appointments were being made directly from civil life, frequently without any test as to the professional qualifications of the appointees, and it was deemed better that appointments should be made in the manner indicated above, in order to insure officers educated and qualified in the profession.

Graduates of the Naval Academy, who have completed the two years' cruise and the final examination and are naturally fitted and inclined to become civil engineers, might be assigned about the 1st of June to duty under the civil engineer of some navy-yard. After three months of such duty, if found qualified, the Chief of the Bureau of Yards and Docks would then recommend to the Department that such officers be ordered to some engineering school to take such a post-graduate course of study as will fit them for the duties of a civil engineer in the Navy. Upon the completion of such post-graduate course the officers would be commissioned assistant civil engineers.

The Chief of the Bureau of Yards and Docks would recommend an engineering school, and have general supervision of the post-graduate course and of the officers while taking such course.

During the past two years two examinations have been held for the purpose of admitting candidates to the corps. The results of the examinations have been entirely satisfactory, and capable and efficient men have been added to this branch of the service. If an examination of this kind were made obligatory by law, it would accomplish the pur-

pose sought in selecting men from graduates of the Naval Academy, and it is earnestly requested that a law may be passed which will provide for admission to this corps in one or the other of the methods indicated.

The Bureau will at a later time submit for your consideration a proposed bill embodying these recommendations and such others as it deems advisable to embody in a law reorganizing the corps.

HISTORY OF THE BOSTON NAVY-YARD.

Several years ago the late Rear-Admiral George H. Preble, under the direction of this Bureau, prepared a succinct but very valuable history of the Boston yard, from its foundation. It contains a valuable record of the principal operations of the yard during its history up to the time when written, and very much of great historical value relating to this yard and the Navy. Admiral Preble was a devoted antiquarian, and the manuscript is written with great precision and accuracy of detail, and in his best vein.

The Bureau recommends that Congress be requested to authorize the publication of this history, precedence for which is to be found in the late publication of the history of the Portsmouth (N. H.) Navy-Yard, by the same hand.

The Bureau accompanies this report with plans of all the navy-yards and stations. These show the condition of each up to the end of the fiscal year, June 30, 1898. They are presented for the purpose of illustrating more fully the report of the operations and the recommendations made. It is believed, further, that they will be of great value as collecting for the first time in an annual report of this Bureau, in convenient form for reference, a complete set of drawings showing the actual conditions at the time.

A statement of the amounts expended under each specific head of appropriation during the fiscal year 1898 and the balance remaining unexpended, as required by law, is appended.

An abstract of offers for special objects of improvement and supplies, coming under the cognizance of this Bureau, is made in conformity to act of March 3, 1843.

Also a report showing the amount expended during the fiscal year 1898 from appropriations pertaining to this Bureau, for civilians employed on clerical duty or in any other capacity than as mechanics and working-men, at various yards and stations, with estimates for the fiscal year 1900, in accordance with law.

Very respectfully, your obedient servant,

MORDECAI T. ENDICOTT,
Chief of Bureau of Yards and Docks.

The SECRETARY OF THE NAVY.

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REPORT OF THE CHIEF OF THE BUREAU OF EQUIPMENT.

WASHINGTON, D. C., *September 28, 1898.*

SIR: I have the honor to submit the report of this Bureau for the fiscal year ending June 30, 1898.

The following were the appropriations for the Bureau under the naval bill for the above-mentioned fiscal year:

Equipment of vessels	\$1, 458, 117
Contingent equipment	15, 000
Civil establishment	15, 525
Increase of the Navy, equipment	162, 628

It is believed that if a state of war had not existed during a part of this year the amounts appropriated would have been sufficient for the exigencies of the service. Up to the date that preparations for war became necessary good balances under each heading were available, and the Bureau had taken precautions to keep the expenses within the appropriations.

When, however, war became imminent, and certain preparations for it had to be made, as well as later during the progress of the war, it became a necessity to spend much larger amounts than originally appropriated. This was especially the case under the heading "Equipment of vessels," out of which all labor is paid and general supplies are purchased.

Congress having appropriated a liberal amount for the national defense, the Bureau was allotted a share of it. In addition, an appropriation of \$100,000 was obtained under the head of "Equipment of vessels," and still later a deficiency appropriation of \$1,300,000 was passed.

The expenditures of the Bureau exceeded these appropriations, including the deficiency appropriation, by the sum of \$116,883. This was covered by the naval appropriation bill approved May 4, 1898, which, by order of the President, was made immediately available.

The obligations, under the head of "Equipment of vessels," during the fiscal year were as follows:

Amount originally appropriated	\$1, 458, 117
Special appropriation	100, 000
National defense	1, 021, 033
Deficiency appropriation	1, 300, 000
Amount expended from appropriation 1898-99	116, 883
Total	3, 996, 033
Amount originally appropriated	1, 458, 117
Difference	2, 537, 916

This difference may be assumed as the cost of the war in actual expenditure of money under this Bureau up to June 30, 1898, but it does not include the expenditure of supplies from stock previously on hand. The Bureau has not the data for estimating this last expense.

The following articles were manufactured at the Boston Navy-Yard, at a cost for labor of \$101,756.96, and for material, \$273,703.57, making a total cost of \$375,460.53, an excess over last year of \$203,976.84.

In the ropewalk:

Manila rope	pounds..	528, 944
Hemp rope	do....	63, 792
Wire rope	do....	150, 207
Bolt rope	do....	28, 062
Hemp seizing	do....	16, 994
Spun yarn	do....	11, 746
Ratline	do....	27, 784
Houseline	do....	18, 721
Round line	do....	12, 641
Tarred marline	do....	15, 307
Manila yarn	do....	409, 922
American yarns	do....	73, 089

In the ropewalk—Continued.

Russian yarns.....	pounds..	105, 731
Codline	do....	21, 452
Breeching stuff.....	do....	14, 618
Signal halyards, lead line	do....	23, 662

In the machine shops:

Galley.....	number..	2
Galley parts	pounds..	4, 972
Chain studs	do....	38, 000
Rings, punches, caps, and miscellaneous articles.....	do....	2, 747

In forge, anchor, and chain shop:

Anchors manufactured, number, 133	do....	21, 339
Chain manufactured, fathoms, 3,725	do....	840, 424
Shackles, grapnels, and miscellaneous articles.....	do....	32, 353

In the rolling mill:

Iron rolled	do....	1, 066, 372
Billet iron.....	do....	119, 520

Hemp, for the manufacture of cordage of all kinds, to the amount of \$97,761.85 was purchased during the year, as follows:

	Tons.	Cost.
Russia hemp.....	100,441	\$21, 123. 78
Manila hemp	413, 477	76, 553. 91
Italian hemp, for test.....	978	74. 16
Total	514, 896	97, 761. 85

The following material was on hand at the Boston Navy-Yard at the close of the year for the manufacture of rope:

	Pounds.
American hemp	13, 000
Manila hemp.....	161, 190
Russia hemp.....	107, 520
Wire	90, 610
Hide (cut yarns).....	4, 230

There was expended in the sail lofts of the several navy-yards the sum of \$121,047.07 for labor and \$90,823.20 for material, and in the rigging lofts \$60,703.81 for labor and \$70,359.57 for material, making a total expenditure for labor and material of \$342,938.65, an excess over last year of \$161,183.64.

The sum of \$574,005.81 was expended at the several navy-yards for labor in equipping vessels, being an excess over last year of \$176,847.04.

There was expended abroad for equipment supplies the sum of \$710,612.50. Of this amount \$601,885.53 was expended for coal.

A total amount of 452,551 tons of coal, costing \$2,122,005.28, or at the rate of \$4.68 per ton, was purchased during the year, as against 138,318 tons, costing \$655,921.72, or at the rate of \$4.75 per ton, during the fiscal year ending June 30, 1897. Of this amount 74,111 tons were purchased abroad or paid for by paymasters of ships, costing \$601,885.53, or at the rate of \$8.12 per ton, as against 56,268 tons, costing \$375,840.63, or at the rate of \$6.68 per ton, for the year 1897. There were purchased at home during the year, upon open purchase requisition or under contract, 378,437 tons of coal, costing, together with the transportation thereof, \$1,520,119.75, or an average of \$4.02 per ton, as against 82,051 tons, costing \$280,091.09, or an average of \$3.41 per ton, for the year 1897.

The increased cost of coal abroad was due to serious and prolonged strikes of coal miners and threatened war between foreign nations.

A considerable quantity of coal was bought free on board at the

point of shipment, and was thence conveyed to ships at the theater of war by Government colliers. No freight charges were therefore incurred, and the cost per ton appears smaller than it would without Government transportation.

By watching the market and making close contracts, the Bureau was able to keep the cost of coal down to a minimum and at a price believed to be remarkable, in view of the conditions.

The following statement shows the amount of labor performed and materials furnished, due to the war, in the equipment department of the various navy-yards and stations, in addition to work on all regular naval ships:

NAVY-YARD, PORTSMOUTH, N. H.

The sum of \$2,120.50 was expended for labor and material in preparing equipment outfits for the following ships, viz, *Piscataqua*, *Frolic*, *Essex*, and preparing cooking outfit for 1,600 enlisted Spanish prisoners of war.

NAVY-YARD, BOSTON.

Complete outfits of rigging, canvas, galleys and cooking utensils, boat supplies, anchors, chains, ground tackle, hawsers, cordage, tow-lines, electric supplies, binnacles, compasses, sextants, chronometers, charts and other instruments and appliances of navigation, sails, awnings, hammocks, and bags were all furnished to the following-named ships, purchased for use during the war:

<i>Bancroft,</i>	<i>Hector,</i>	<i>Lebanon,</i>	<i>Southery,</i>
<i>Calumet,</i>	<i>Inca,</i>	<i>Lehigh,</i>	<i>Seminole,</i>
<i>East Boston,</i>	<i>Katahdin,</i>	<i>Marcellus,</i>	<i>Vulcan,</i>
<i>Gen. Russell,</i>	<i>Lancaster,</i>	<i>Oneida,</i>	<i>Wyandotte.</i>

To meet the demands of the service, the Equipment Department was compelled to increase the force from 183 to 356 men, and work overtime.

NAVY-YARD, NEW YORK.

Complete outfits of rigging, canvas, galleys and cooking utensils, boat supplies, anchors, chains, ground tackle, hawsers, cordage, tow-lines, electric supplies, binnacles, compasses, sextants, chronometers, charts and other instruments and appliances of navigation, sails, awnings, hammocks, and bags, were all furnished to the following-named ships purchased for use during the war:

<i>Alexander,</i>	<i>Free Lance,</i>	<i>Nezinscot,</i>	<i>Sioux,</i>
<i>Abarenda,</i>	<i>Gloucester,</i>	<i>Nahant,</i>	<i>Stranger,</i>
<i>Algonquin,</i>	<i>Hannibal,</i>	<i>Osceola,</i>	<i>Sylvia,</i>
<i>Aileen,</i>	<i>Huntress,</i>	<i>Prairie,</i>	<i>Scorpion,</i>
<i>Badger,</i>	<i>Hornet,</i>	<i>Panther,</i>	<i>Topeka,</i>
<i>Cesar,</i>	<i>Hist,</i>	<i>Pompey,</i>	<i>Tecumseh,</i>
<i>Cassius,</i>	<i>Jason,</i>	<i>Resolute,</i>	<i>Uncas,</i>
<i>Celtic,</i>	<i>Kanaucha,</i>	<i>Restless,</i>	<i>Viking,</i>
<i>Eugenia,</i>	<i>Leonidas,</i>	<i>Sterling,</i>	<i>Wompatuck,</i>
<i>Enquirer,</i>	<i>Mayflower,</i>	<i>Saturn,</i>	<i>Water Barge No.1,</i>
<i>Elfrida,</i>	<i>Niagara,</i>	<i>Scindia,</i>	<i>Yankee.</i>

In the sail loft were manufactured 5,000 coaling bags, 12,000 clothes bags, and 8,000 hammocks.

To meet the enormous demand for flags and signals the force in the flag-making department was increased from 12 to 80 persons.

The Bureau desires to bear witness to the highly efficient service during the war at this yard in supplying ships with equipment outfits.

NAVY-YARD, LEAGUE ISLAND.

In like manner to the Boston and New York navy-yards, outfits similar to those previously enumerated were supplied to the following-named ships, including the necessary work of installation:

<i>Arctic,</i>	<i>Enterprise,</i>	<i>Manhattan,</i>	<i>Princeton,</i>
<i>Arethusa,</i>	<i>Edith Howes,</i>	<i>Mahopac,</i>	<i>Samoset,</i>
<i>Ajax,</i>	<i>Jason,</i>	<i>Minneapolis,</i>	<i>Sylph,</i>
<i>Oatskill,</i>	<i>Justin,</i>	<i>Miantonomoh,</i>	<i>St. Paul,</i>
<i>Canonicus,</i>	<i>Lehigh,</i>	<i>Massasoit,</i>	<i>St. Louis,</i>
<i>Columbia,</i>	<i>Leyden,</i>	<i>Modoc,</i>	<i>Vixen,</i>
<i>Dorothea,</i>	<i>Montauk,</i>	<i>Nahant,</i>	<i>Yosemite.</i>

NAVY-YARD, WASHINGTON.

There were issued to ships during the war, 1,260 rockets and staves, 166 belts, 167 holsters, 173 pistols, 1,155 blue lights, 89 service boxes, 7,020 red stars, 7,020 green stars, and 76 army kits.

NAVY-YARD, NORFOLK.

The following-named ships were supplied with outfits, more or less complete, as required. A large number of hammocks were manufactured, and generally the equipment resources of the yard were taxed to their utmost capacity to keep pace with the work demanded:

<i>Apache,</i>	<i>Justin,</i>	<i>Morrell,</i>	<i>Stranger,</i>
<i>Armeria,</i>	<i>Katahdin,</i>	<i>Nantucket,</i>	<i>Swanee,</i>
<i>Alice,</i>	<i>Launch No. 24,</i>	<i>New York,</i>	<i>Southery,</i>
<i>Brooklyn,</i>	<i>Lancaster,</i>	<i>Osceola,</i>	<i>Uncas,</i>
<i>Cassius,</i>	<i>Leonidas,</i>	<i>Princeton,</i>	<i>Vesuvius,</i>
<i>Cæsar,</i>	<i>Manning,</i>	<i>Rainbow,</i>	<i>Vicksburg,</i>
<i>Cincinnati,</i>	<i>Maple,</i>	<i>Rodgers,</i>	<i>Vixen,</i>
<i>Dolphin,</i>	<i>McKee,</i>	<i>Saturn,</i>	<i>Windom,</i>
<i>Hamilton,</i>	<i>Merrimac,</i>	<i>Scindia,</i>	<i>Woodbury,</i>
<i>Hannibal,</i>	<i>Minneapolis,</i>	<i>Siren,</i>	<i>Yankee,</i>
<i>Harvard,</i>	<i>Mohawk,</i>	<i>Solace,</i>	<i>Yankton,</i>
<i>Hudson,</i>	<i>Montgomery,</i>	<i>Sterling,</i>	<i>Yale.</i>

Norfolk was the shipping point from which most of the Government coal was forwarded to the fleet. This entailed much extra work, outside of the navy-yard proper, upon the commandant thereof, in connection with the inspection and rapid handling of coal and the care of colliers, coal barges, etc. The station was also heavily taxed to provide the fleet at Hampton Roads and Newport News with coal, water, and other equipment stores. After the necessary facilities were provided, these duties were performed in a highly satisfactory manner.

UNITED STATES NAVAL STATION, PORT ROYAL, S. C.

The *Passaic* and *Nantucket* were fitted out here, and the *Dorothea* and *Water Barge No. 1* received minor repairs.

NAVY-YARD, PENSACOLA.

The sum of \$8,428.08 was expended for labor and material in fitting out the *Potomac*, *Choctaw*, *Powhatan*, and *Tacoma* for the auxiliary naval force, for the general-service men, for yard use, and for the purchase of the coal barge *Isabella Graham*.

NAVAL STATION, KEY WEST.

The following amounts were expended for labor, material, etc.:

Coal sheds, tracks, etc.....	\$14,311.98
For fitting out <i>Mangrove</i>	50.20
Repairing lighters and barges.....	1,463.01
Use of tugs, lighters, etc., not in naval service	1,521.25
Distilling plant and materials furnished.....	1,108.00
Coal lighters and barges purchased and constructed	87,570.00
Steam launch.....	7,460.89
Total.....	113,485.33

Commander James M. Forsyth, U. S. N., the commandant, and his assistant, Lieut. Webster Doty, U. S. N. (retired), are entitled to special commendation for their great and successful exertions at this station during the war, in promptly supplying ships with coal and fresh water. The demands for these supplies were continuous day and night and far beyond what might have been reasonably expected from the resources of the station.

EQUIPMENT WORK AT OTHER THAN NAVAL STATIONS.

The following vessels of the auxiliary navy were prepared for service in the equipment department at the places designated:

East Boston at Lockwood Manufacturing Company, Boston.

Panther, *Resolute*, *Badger*, and *Gloucester* at Morgan Iron Works, New York.

Free Lance and *Aileen* at Quintard Iron Works, New York.

Gor. Russell at Atlantic Iron Works, Boston.

Shearwater at Crescent Ship Yard, Elizabeth, N. J.

Ajax, *Dorothea*, and *Supply* at Cramp's Ship Yard, Philadelphia.

Chickasaw, *Waban*, and *Cheyenne* at Charleston, S. C.

Passaic at Brunswick, Ga.

Buffalo, *Dirie*, *Harvard*, *Justin*, *Minneapolis*, *Solace*, *Yale*, and *Yosemite* at Newport News S. & D. D. Co., Newport News, Va.

Albatross, *Iroquois*, *Vigilant*, and *Active* at Union Iron Works, San Francisco, Cal.

U. S. NAVAL OBSERVATORY.

The war emergency affected the Naval Observatory mainly in its issue of nautical instruments to ships, the increase being more than six to one, and the actual shipments for three and one-half months being considerably more than for either of the three preceding years—1895, 1896, and 1897. In fact, the demand for nautical instruments was so great that all in the country were purchased, and many in addition ordered from abroad by cable.

The detachment of many officers for sea duty entailed upon those remaining a large amount of extra work.

PAPEKS ACCOMPANYING THE
THE HYDROGRAPHIC OFFICE.

By an act of Congress approved May 4, the Hydrographic Office was attached to and made a part of this Bureau, and the transfer of the same from the Bureau of Navigation to this Bureau was completed May 7.

The energies of this office have been heavily taxed to keep pace with the demand for outfits for ships rapidly added to the Navy during the war. In time of peace the highest average quarterly demand upon the division of chart construction for furnishing the division of supply amounted to 6,600 navigating charts, while for three months of the present exigency the division of chart construction furnished 43,910 copies of charts.

The same activity for furnishing books for navigating purposes was required. In time of peace about four new outfits of books and charts have been required for the Navy during a single quarter, but during the three months of war emergency 134 outfits were required.

THE COMPASS OFFICE.

The resources of the Bureau were taxed to the utmost to supply compasses, binnacles, and their accessories to the large number of ships added to the Navy during the war. All that could be obtained in the country were purchased and every maker set to work to his extreme capacity to turn out additional supplies. No ship was delayed for the want of a suitable compass outfit, though the stock was reduced at one time to that of a single ship.

In the compass office but few officers have received instruction in the practical work of compensation of the compass, because of the war. Every officer who is destined to have charge, for the first time, of the compasses on board ship should receive a course of practical instruction on their care and correction.

I especially recommend that an assistant superintendent of compasses be appointed under civil-service rules, so that the work of the office can be carried on at all times, without any danger of interruption, when one officer relieves another as superintendent. A great deal of valuable data is coming into the office, and it would be for the best interests of the service to have the work continuous under a trained expert.

OFFICE OF THE INSPECTOR OF ELECTRICAL APPLIANCES.

The Bureau regards with much concern the constantly increasing demands for repairs and renewals to the electrical outfits and supplies of ships. While there are some noted exceptions, such as the ships on the Asiatic station and the *Oregon*, the experience of ships on the home station would seem to indicate that they can not long be self-sustaining without dockyard electrical work. The remedy appears to be in keeping electrical outfits as simple as the military necessities will permit and providing a better personnel for its care and custody. Happily, during the past year a special rate, the exclusive duty of which is to take charge of the electrical outfits of ships, has been established. The pay, however, is regarded by the Bureau as inadequate, and the naval training on shore for this duty utterly inefficient. The number of officers who are familiar with electrical engineering seems to be decreasing rather than increasing. Formerly this science was taught at the torpedo station in a sort of post-graduate course for naval offi-

cers, and much useful information thus disseminated, as well as interest awakened. When this school was abandoned, all official progress toward educating naval officers in electrical matters ceased. In the meantime electrical apparatus on shipboard has multiplied many fold and become, like all other accessories of a man-of-war, much more complex. In the opinion of the Bureau the only sure way of maintaining the efficiency of the electrical appliances on shipboard is to have a specially trained corps of officers and men for that purpose. It is earnestly recommended that this be done. The difficulties of maintaining an electrical plant on board ship in an efficient condition are tenfold greater than on shore. Only those who have had experience can understand or conceive of these difficulties.

By great exertion the Bureau met the demands of the war for additional electrical equipment fairly well, but suffered for the want of sufficient professional supervision over its installation.

The most important electrical supplies purchased in the open market for ship use are practically in the hands of a monopoly. The usual high prices under such circumstances are paid. The Bureau considers it advisable to erect at the New York Navy-Yard, for the purpose of overcoming this evil, sufficient appliances for the manufacture of many of the articles now purchased.

A new electrical repair shop at the New York Navy-Yard is now being fitted up. Its completion will greatly facilitate electrical work on ships.

THE HOMING-PIGEON SERVICE.

The homing-pigeon service established by my predecessor has been continued, and while the results have not been as satisfactory as the Bureau wished, especially with the cote at Key West, in the immediate vicinity of the war, yet this may have been due to the climate and to the want of an experienced man thoroughly familiar with the methods of training the birds.

The Bureau strongly recommends that an officer be detailed to superintend the various cotes and personally see that all the duties of the keepers are duly performed. It is impossible to conduct the service in its various details from a desk in an office. The flights from the cote on the Pacific coast have been fairly satisfactory. As considerable money has been expended on the system it should be thoroughly tried before being abandoned.

COAL TESTS.

The endeavors of the Bureau have been largely directed to securing the best coal for steaming purposes. With this end in view, all dealers and miners have been invited to submit samples of their coal for chemical analysis. Nearly all have availed themselves of this opportunity and tests have been made at the Washington Navy-Yard. The results have been carefully noted by the Bureau, and in meeting the heavily increased demand for such coal on account of the war the Bureau has been materially aided by this data in keeping a constant flow of the best coal, at a reasonable rate, to the points where most needed. Evaporative tests still continue to be made at the New York and Mare Island yards when desired.

THE WAR.

It is at present too early to place on record for future guidance the entire experience of the Bureau during the war. It is proposed to do

this at some future time. The demands upon this Bureau and its subordinate branches occasioned by the war were, however, very great. This was essentially so with reference to the coal supply of the fleet. When war was threatened, the Bureau made every possible effort to procure coaling stations near the scene of its probable location. Special efforts were directed to the vicinity of the passages about the Antilles, without success, however. At Key West there existed a single coal shed with a capacity of 3,000 tons only, with but one coal lighter for transportation. More coal sheds could not be erected for want of funds. When funds were procured, it was too late to complete additional sheds before the war was well under way. All available space at Key West was eventually covered with sheds, giving a total capacity there for the storage of 9,000 tons. Ships were frequently present with a bunker capacity of 10,000 to 12,000 tons. The large ships could not enter Key West Harbor or approach within 6 miles of the coal wharf. No other place near the scene of war was available.

As a preparation for war, the Bureau had asked for and obtained many tenders for the transportation and supply of coal. When the crucial moment came, with the exception of a single Baltimore firm, all declined to adhere to their offers on account of war risks. The Baltimore firm mentioned managed to secure a few schooners whose owners and masters were willing, for reasonable compensation, all things considered, to assume the risk and contract to deliver coal at Key West. Every one offered was taken. The Department was still in desperate straits for transportation of coal, and the only alternative was to purchase steamers, arm and man them with the naval forces. There were but few vessels in this country suitable for the transportation of coal and available for immediate use. When these were found, their owners knew well the necessities of the Government and generally demanded exorbitant prices. Whatever the cost, the Government could least of all afford delay. The following-named vessels were purchased at once:

Name.	Cost.	Carrying capacity.
		Tons.
Merrimac	\$342, 000	5, 000
Saturn	290, 000	3, 000
Sterling	190, 000	2, 000
Niagara	200, 000	1, 800
Lebanon	225, 000	1, 000

These were rapidly fitted out and dispatched to the fleet with their cargoes of coal. Their arrival afforded great relief to the squadron commanders and to the Bureau. The first great emergency having passed, additional colliers, mostly foreign vessels, were purchased at fair prices, and eventually the Bureau possessed an efficient armed collier fleet, with a carrying capacity of 50,000 tons, for use in the Atlantic. Without these vessels it would have been impossible to carry on the operations brought to a successful issue by the fleet.

The monitors were especially helpless with their small steaming radius without the presence of colliers. The essential duty of the Government colliers was to follow the fleet wherever it might go and supply it with coal. The assistance rendered by the *Merrimac* is historic.

As the war progressed, the coasting fleet recovered from its fright, and a large fleet, mostly schooners, was employed transporting coal to shore stations. As the Government possesses practically no storage

facilities, and as the movements of ships during war can not be foreseen, these vessels were often subject to many delays, for which large sums in demurrage were paid. These payments were further augmented by the sudden termination of war and the appearance of yellow fever at Key West.

In conclusion, the Bureau, with pardonable pride, begs to state that, with the exception of a single telegram from the commander in chief, urging that a particular kind of coal only be supplied to the fleet, not a single request or communication concerning an adequate coal supply was received from any ship afloat during the entire war. No better evidence can be offered that an abundant supply of coal was available wherever it was needed. At one time there was afloat in steam colliers at Hampton Roads, ready to sail at an hour's notice to any point desired, 40,000 tons of the best coal this country affords.

FRESH WATER FOR STEAMING PURPOSES.

It is the duty of this Bureau to supply to the fleet fresh water for steaming purposes. Our ships of recent construction are supplied with distilling apparatus, which, when installed, was hoped to be adequate to supply sufficient fresh water to replace the loss after the boilers had been filled in port. This has not been realized, owing chiefly, probably, to leaky steam pipes. The *Oregon* is a notable exception.

No natural supply of fresh water exists at Key West, and the necessity for providing additional water for ships coaling there was foreseen by the Bureau when making preparations for war. A contract was also made for erecting a large distiller, capable of making from sea water 45,000 gallons of fresh water per day. Had this contract been fulfilled, the distiller would have been ready for use before the war commenced. It was not completed until long after the war commenced, and it was not then capable of making on an average more than 25,000 gallons per day, besides being subject to frequent repairs.

It was found more difficult to supply adequate fresh water for ships at Key West than to supply coal. The boilers of ships on blockade duty before Santiago were injured for the want of fresh water, and gave the commander in chief much concern.

In future fresh water for boilers must be rated among the necessities of the fleet. It must be abundantly supplied at all coaling stations and transported to the fleet when supplied with coal elsewhere. In the opinion of the Bureau this can best be done by means of tank ships, such as used to carry oil in bulk. The *Arethusa* was purchased for that purpose, but unfortunately was not ready for use before hostilities ceased.

It has been the policy of the Bureau heretofore to purchase fresh water for steaming purposes, but this is entirely too expensive. For instance, at Hampton Roads 1,000 gallons of fresh water delivered to ships cost \$7.50. If drawn from the water mains at the Norfolk Navy-Yard into a water barge and towed to Hampton Roads by a yard tug, it costs 30 cents.

During the war the Bureau paid at one time \$2,067.50 for 432,000 gallons of fresh water at Tompkinsville, N. Y., for the *St. Paul* and pro rata for other ships. Had this water been drawn from the mains at the Brooklyn Navy-Yard and transported to the ship as above mentioned, it would have cost only \$43.25.

To remedy this evil the Bureau is procuring a water barge for each naval station. The distilling plant at Key West is being improved to

enable it to continuously produce its full capacity per day, and another large distiller is being erected at the coaling station at Dry Tortugas.

ASSISTANTS TO THE BUREAU.

The Bureau desires to call your especial attention to the following-named subordinates and assistants performing duty under this Bureau, who, on account of the urgent need of their services, could not be spared for sea service during the war:

Commander J. E. Craig, U. S. N., Hydrographer to the Bureau of Equipment.

Commander O. S. Sperry, U. S. N., Equipment Officer, Navy-yard, New York, N. Y.

Lieut. Commander C. G. Bowman, U. S. N., Equipment Officer, Navy-yard, Mare Island, Cal.

Lieut. Commander U. R. Harris, U. S. N., Assistant Equipment Officer, Navy-yard, Boston, Mass.

Lieut. W. C. Cowles, U. S. N., assistant, Bureau of Equipment.

Lieut. S. W. B. Diehl, U. S. N., Superintendent of Compasses, Bureau of Equipment.

Lieut. G. W. Denfeld, U. S. N., Inspector of Electrical Appliances, Bureau of Equipment.

The Bureau begs to express the hope that these officers, whose services on shore were made necessary by their eminent professional qualifications and accomplishments, will not suffer on account of having had no service afloat during the war.

CLERICAL FORCE DURING THE WAR.

The Bureau desires to commend its clerical force for faithful and efficient service during the war. Overtime work was constant, and attendance at the Bureau by stenographers and others on Sundays was habitual.

ASSISTANT CHIEF OF BUREAU.

The operations of this Bureau are of great magnitude and involve an immense amount of detail. It is earnestly recommended that Congress be asked to provide an assistant chief of bureau, as now provided for most of the bureaus of the Department.

REPORTS OF HEADS OF SUBORDINATE BRANCHES AND ESTIMATES.

There are included herewith the reports of the Superintendent of the Naval Observatory, the Director of the Nautical Almanac, the Hydrographer to the Bureau of Equipment, the Inspector of Electrical Appliances, and the Superintendent of Compasses, all of which are approved and commended to your attention.

The estimates for the next fiscal year, ending June 30, 1900, are also submitted.

Very respectfully,

R. B. BRADFORD,
Chief of Bureau.

The SECRETARY OF THE NAVY.

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REPORT OF THE CHIEF OF THE BUREAU OF NAVIGATION.

NAVY DEPARTMENT, BUREAU OF NAVIGATION,
Washington, D. C., October 1, 1898.

SIR: I have the honor to submit herewith a report (marked A) of the movements and duties of the ships of the Navy during the past year, copies (marked B (1) and B (2)) of reports of the Superintendent of the Naval Academy, copies (marked C and D) of the reports of the commanding officer of the training station, copies (marked E (1) and E (2)) of reports of the chief intelligence officer, copies (marked F and G) of the report of the commanding officer of the Naval Home, a copy (marked H) of the report of the superintendent of the Coast Signal Service, and an appendix (marked K)* containing copies of documents relating to the conduct of the war.

Estimates for the support of the Bureau and the establishment under its fiscal control are also submitted (marked L).

The report of the year has been made more comprehensive than usual, and has been carried up to date in order to make important information relating to the war conveniently available.

The short time at the disposal of the Bureau for the preparation of the report has undoubtedly caused some inaccuracies and omissions; but officers are called upon to compare certain portions of the report with matters of their own experience and to report errors to the Bureau, thus furnishing material for publishing at a future date a complete and accurate record of the period of the war.

The Bureau's methods of correspondence and of record and file have proved themselves satisfactory and adequate to the greatly increased demands made upon them as a result of the disaster to the *Maine* and the war with Spain.

Fifty-eight thousand seven hundred and fifty-six numbers were given to documents received in the Bureau or sent out from it during the thirteen months ending July 30, 1898. This number probably represents about 1,000,000 separate papers. The increase during the war period over the business of ordinary times was about 70 per cent. The foregoing figures relate to papers sent out or taken up for record. All correspondence of a trivial nature is omitted. Probably one hundred persons can claim that the sinking of the *Merrimac* was due to their having suggested it to the Department.

To properly handle the increased volume of work, most of it of an original character, requiring much more thought and attention than the ordinary routine work of the Bureau, the force of officers and clerks had to be increased, but methods were little changed. Throughout the active period of the war, and until the middle of August, one or more officers were on duty both night and day, and a large part of the force worked habitually well into the night. Most of the clerks, both of the original and of the increased force, performed their duties admirably and with conscientious devotion. In certain cases their untiring labor merits the highest commendation, and it will be a pleasure to the Bureau to suitably reward them as opportunity offers.

One hundred and twenty-nine applications for service pensions were received during the fiscal year ending July 1, 1898. One hundred and ten claims were allowed, and 26 claims were disallowed during the same period; 16 claims were pending on July 1, 1897, and 9 claims were pending on July 1, 1898.

* Appendix is published in separate volume.

Claims pending July 1, 1897	16
Claims received fiscal year ending July 1, 1898	129
Total	145
Claims allowed fiscal year ending July 1, 1898.....	110
Claims disallowed fiscal year ending July 1, 1898.....	26
Claims pending July 1, 1898	9
Total	145

The statistics of the fiscal year in regard to enlistments, discharges, and citizenship of apprentices and general-service men, including petty officers, are as follows:

	Men.	Appren- tices.
Applied for enlistment.....	79, 112	2, 212
Rejected for physical disabilities and other causes.....	63, 125	2, 209
Disqualifications waived.....	877	12
Failed to enlist	780	141
Total number enlisted in the general service.....	15, 624	814
Number in general service June 30, 1898	20, 802	2, 026

A total of 22,828. Of this number 3,350 were serving under continuous-service certificates.
There were discharged during the year, men, 3,219; apprentices, 399, as follows:

	Men.	Appren- tices.
Expiration of enlistment.....	2, 122	214
Disability	238	32
Services no longer required.....	411	2
Own request.....	108	2
Request of commanding officer	10	8
Bad conduct.....	143	44
Illegal enlistment	1	.....
Inaptitude	14	26
Undesirable.....	140	47
By purchase.....	32	30
Deserted.....	1, 173	144
Died.....	268	33

Of the number of men in the general service there are 6,429 petty officers. Of this number 63 per cent are native born and 88 per cent are citizens of the United States, and of the remainder 62 per cent have declared their intentions to become citizens.
Of the 14,351 men in the general service holding other ratings, 66 per cent are native born and 77 per cent are citizens, and of the remainder 42 per cent have declared their intentions to become citizens.
Of the 2,026 apprentices in the service over 90 per cent are native born.
Of the whole number of men in the service 65 per cent are native born and 80 per cent are citizens. Of the remainder 45 per cent have declared their intentions to become citizens.
The war between the United States and the Kingdom of Spain began on April 21, 1898. On that date three lieutenants and one lieutenant, junior grade, were given acting appointments, "to continue in force during the continuance of the exigency which required their issuance and the pleasure of the Secretary of the Navy." Further appointments were made in the various corps and grades from day to day, as the exigencies of the service required.

In the absence of legislation the forms and procedure of the civil war were used in making appointments, but on May 19, 1898, the Bureau was advised that the form of appointment being used did not entirely conform to the provisions of the act of Congress which had been passed to provide for the increase in the personnel. All appointments which had been issued, 214 in number, were thereupon recalled and commissions issued in their stead, which discontinued the use of the word "acting" and indicated that the appointment was made by the President instead of by the Secretary of the Navy. The examination of candidates for appointment as officers for temporary service was not required by law, and only such examinations as circumstances would admit of were deemed necessary. They have often, from necessity, been informal, and in some instances professional examination was entirely waived. This was the case during the first few weeks of the war with officers appointed from the various State naval militia.

Up to October 1, 1898, 856 appointments of officers for temporary service were issued, as follows:

Commanders.....	3	
Lieutenant-commanders	3	
Lieutenants	112	
Lieutenants (junior grade).....	114	
Ensigns	209	
Naval cadets (line).....	15	
		<hr/>
Total line officers		456
Medical officers		64
Pay officers		64
Engineer officers.....	185	
Warrant machinists.....	20	
		<hr/>
Total engineer force.....		205
Chaplains.....	2	
Boatswain	1	
Carpenters.....	3	
Mates.....	18	
		<hr/>
		24
		<hr/>
Total naval officers.....		813
Second lieutenants, U. S. Marine Corps.....		43
		<hr/>
Total.....		856

One hundred and ninety-four candidates who passed the required examinations were not appointed by reason of their services not being required.

Their names remain on the eligible lists as follows:

For the line.....	31
Pay Corps	71
Engineer Corps	92
	<hr/>
Total	194

One hundred and eighty-one candidates failed to pass the required examinations.

Up to and including October 1, 1898, 360 appointments have been vacated as follows:

Declined and canceled	18
By discharge.....	4
By resignation	16
By appointment in regular service	7
By promotion	10
By expiration of commission	1

By being dropped	2
By death	2
By honorable discharge	300
<hr/>	
Total	360

Estimates are submitted for the maintenance of the office of naval intelligence. This office has for some years performed duties of great importance. It collects and classifies practically all important authoritative information published in regard to the growth and progress of foreign navies and their matériel and personnel. It also keeps informed of the defenses of foreign ports. At the beginning of the war with Spain it furnished the Department with much valuable and accurate information in regard to the defenses of Cuba, Porto Rico, and the Philippines, as well as with accurate information as to the location of all of the strong vessels of the Spanish fleet. All information of the character indicated is kept filed in such a manner that information on any required subject can be immediately put at the disposition of any bureau requiring it. This office, through the naval attachés, also did valuable duty in arranging the purchase of ships of war and war material abroad, just before the outbreak of the war.

This office was originally established, without express Congressional authority, much as a board would be established, simply to meet departmental necessity. This necessity is, however, permanent, and the duties of the office have become so far-reaching and its operations so extensive that it seems proper that the office should be authorized and organized by law under the Bureau of Navigation of the Navy Department, the office having been transferred from the office of the Assistant Secretary to the Bureau by the order of the Secretary, dated April 26, 1898.

The clerks now employed in the office are simply borrowed from the bureaus and offices of the Navy Department and from the Washington Navy-Yard. The increased volume of business now transacted by all these offices makes it desirable to return these clerks to the offices where they properly belong.

The Bureau recommends that Congress be requested to authorize the enlistment of 20,000 men for general service and 2,500 apprentices. It is not possible to make a close estimate of the number of men that will be necessary to man the fleet during the coming year; but it is certain that within a very few years it will reach 20,000. It has always been the policy of the Bureau to stop enlistments when the cruising ships were full and there were a fair number of men on board receiving ships to make up waste and allow for prompt transfers without interfering with the organization of cruising ships. For the last few years, however, the Bureau has been engaged in a constant struggle to make the established quota suffice for the needs of the service. The crews have been cut down to the point where the loss of a very few men would seriously cripple the ship. The reserve on board receiving ships has practically ceased to exist, so that now when a vacancy occurs it has to be filled by transfer from some other cruising ship, thereby breaking up the organization of the latter and being a serious detriment to her efficiency.

With authority under direction of the President to enlist 20,000 men for general service and to keep 2,500 apprentices under training at the training stations and on board training cruising ships, it would be possible to avoid this last great evil. Enough men could be kept on board receiving ships at all times to enable the Bureau to promptly fill accidental vacancies that might occur on a cruising ship without making the

shifts and changes which are now necessary to fill a single vacancy. This additional quota would also enable the Bureau to make up crews of three-year men for vessels ordered to foreign stations without drawing them from the organized crews of cruising ships on the home station. It would not be the policy of the Bureau to keep all of the 20,000 men under enlistment unless they were actually needed for service in the fleet; but in order to insure efficiency at least this number should be allowed.

The increase in personnel, so far as it relates to officers, can best be provided for at this time by passing the House bill No. 10403, which received the approval of the Department last spring and which was presented to Congress at its last session. This bill reconciles so many conflicting interests in the service and has been so thoroughly discussed by officers of all grades that, while probably no one officer approves of all parts of it, all recognize that it does promote the efficiency of the whole service by removing those causes for dissatisfaction which have existed for years, and officers in all grades wish the bill to pass. At the same time the bill provides for an increase of 99 in the total number of line and engineer officers and for 100 warrant machinists, and, while it may be necessary to further increase these numbers within a few years, the bill has been so wisely drawn that this increase can be satisfactorily made by a simple bill providing a uniform percentage of increase in each grade, without in any way disturbing the organization which will be established by the bill in question.

The Bureau believes that any increase in the number of officers can best be made gradually by passing House bill No. 10403 first, and only making further increase when the growth of the service demands it, thus giving the service institutions time to furnish trained men in the lower grades and to build up the Navy homogeneously. It is proper to note further that this bill provides for giving Army pay to the Navy. The Army pay table has been in force for years in the Army and in the Marine Corps, with few changes, and has given satisfaction. The Navy table presents many inconsistencies, and has always been a cause of dissatisfaction. The evident justice of the change should be the only argument needed in its favor.

The Bureau has not enlarged upon the necessities in regard to personnel, believing that the Department and Congress are both so well acquainted with the requirements of this detail of naval organization that the statement of the Bureau's needs will be sufficient to secure the approval of the Department and the favorable action of Congress.

The officers who served under volunteer appointments during the war have rendered valuable service to the Navy and to the country. It has at all times, however, been necessary, with exceptions in rare cases, to consider the limitations of experience in each particular case, and the volunteer officer has not been and can not be the equal in professional attainments of his brother of the regular establishment. The Navy, as amply shown by the experience of the war, can only obtain officers trained in every branch of naval duty and equally well prepared for any service, by training them in the service, beginning with the Naval Academy and following the training up through the various grades.

The Naval Militia of the various States were mustered into the service about the time of the beginning of the war. These organizations were of great help to the Department in manning the coast signal stations, which they did promptly and efficiently, in manning the vessels of the Auxiliary Naval Force, and in promptly furnishing material for

crews of the auxiliary vessels serving with the regular fleet. For duty on board active ships, however, they could not be considered as more than material. With some individual exceptions, the personnel were found to lack the experience and training which would have been necessary for the performance of the duties of the ratings held. In the ordinary course most of these men would have been enlisted as landsmen and nothing higher. Men holding the ordinary blue-jacket ratings were, moreover, of a class entirely unsuited to perform the duties that of necessity fall to the blue-jacket. Men who had been clerks, lawyers, professional men, while they might have been able to camp on shore and look out for themselves and their surroundings, found it a much different matter on board a crowded ship, where only a thorough understanding of how to make the best of everything would make their position bearable. These men were landsmen, they were not seamen in either the general or particular sense of the word. All, as was expected, had to be put through a thorough course of drill; even the officers, with exceptions—principally Naval Academy graduates—were found to be unqualified to act as instructors.

The Bureau does not wish to be understood as underrating the zeal of the members of these organizations. The reports made by commanding officers show, almost without exception, that all were zealous and attentive to duty, but they also show that officers and men lacked all of that training and sea experience which would have made them really efficient. The Bureau wishes further to emphasize that the work of the Naval Militia at the signal stations—duty for which they were better adapted—was most satisfactorily performed, and that they likewise were useful in manning the harbor-defense vessels of the Auxiliary Naval Force, where they were within easy reach of the shore with all its facilities, and were not subject to the privations which are a matter of course on board a man-of-war when at sea.

A difficulty was experienced, too, in mustering these men in. The Government has for some years made a liberal appropriation for the support of the Naval Militia in addition to the amounts allowed by the States. This expenditure does not, however, carry with it the right to call upon the Naval Militia unless they volunteer. They are in no way subject to the orders of the Department until they have ceased to be Naval Militia and have been regularly mustered into the service. This same difficulty has been experienced in peace times. The period of the annual drills has uniformly been a period of vexatious rearrangements of programme for the ships assigned to this duty.

The foregoing considerations lead the Bureau to recommend that future appropriations shall be made on an entirely different basis. The best plan of all, in the opinion of the Bureau, would be to provide only for a national or Federal naval reserve, to be entirely under the control of the Department, and to be recruited from the seafaring classes, each member enrolled being subject to a limited enlistment, which would compel him to serve in war times under the pains and penalties of desertion, and which would require him to report once each year to the proper authority for instruction in such drills and other matters as the Department might prescribe, each man so enrolled to receive one month's pay in his rating yearly, provided he renders such service. The House bill No. 1103, presented first session of the Fifty-fifth Congress by the Hon. Amos Cummings, embodies in general form the views of the Bureau. There are in this bill certain minor points which, in the opinion of the Bureau, should be revised, but the bill as a whole meets with the approval of the Bureau, and the

Department is advised to urge the passage of a bill drawn up on similar lines.

The Bureau has already brought to the attention of the Department the need for a change in legislation in regard to promotions of officers on account of gallantry in action or extraordinary heroism. The law as it now stands provides a reward which can only be given at the expense of other officers. The Bureau urges that Congress be requested to enact legislation which will provide a suitable reward, such as a medal of honor, which could be given to an officer without working to the detriment of others, who, while they may have had no opportunity to particularly distinguish themselves, have, nevertheless, performed faithful and valuable duty, and should not be compelled to lose in rank and pay by becoming stepping stones for others.

As early as the 1st of January, 1898, the increasing tension of our relations with Spain, on account of the Spanish war in Cuba, caused the Department and the Bureau to issue certain precautionary orders, the more important of which are below outlined in order to indicate the policy which controlled the Department at that time:

Jan. 11, 1898.—Commander in chief, European Station, ordered to retain men whose enlistments were about to expire.

Jan. 16, 1898.—*Helena* (en route to Asiatic Station) ordered to remain at Funchal.

Jan. 17, 1898.—Commander in chief, South Atlantic Station, informed of the condition of affairs in Cuba, and directed to proceed with the *Cincinnati* and *Castine* to Para.

Jan. 17, 1898.—*Helena* ordered to proceed to Lisbon.

Jan. 17, 1898.—*Wilmington* (en route to South Atlantic Station), ordered to await orders in the West Indies.

Jan. 25, 1898.—Commander in chief, European Station, ordered to assemble squadron at Lisbon.

Jan. 27, 1898.—Commander in chief, Asiatic Station, ordered to retain men whose enlistments were about to expire.

Feb. 17, 1898.—Commander in chief, South Atlantic Station, ordered north with *Cincinnati* and *Castine* from Para.

Feb. 24, 1898.—Orders issued to commandant, navy-yard, New York, to watch movements of submarine torpedo boat in connection with *Vizcaya*.

Feb. 25, 1898.—Commander in chief, European Station, ordered to keep vessels under his command filled with coal.

Feb. 25, 1898.—Commander in chief, Asiatic Station, ordered to assemble squadron at Hongkong, and retain the *Olympia* (under orders at that time to go to San Francisco): instructions outlined for conduct and duty in case of hostilities.

Feb. 26, 1898.—Commander in chief, South Atlantic Station, Pacific Station, Asiatic Station, North Atlantic Station, and European Station, ordered to keep vessels filled with the best coal to be had.

Mar. 3, 1898.—*Mohican* ordered to carry ammunition to Honolulu, transfer same to *Baltimore*, which vessel was ordered to proceed to Asiatic Station for duty in that squadron.

Mar. 7, 1898.—*Oregon* (at Bremerton) ordered to San Francisco for ammunition.

Mar. 7, 1898.—*Brooklyn* (at La Guayra) ordered to proceed at once to Hampton Roads; informed of situation.

Mar. 8, 1898.—Navy-yards at Brooklyn, Boston, League Island, ordered to enlist men for the *Columbia* and *Minneapolis*, which vessels were ordered to be prepared for service. This exceeded established quota of enlisted men.

Mar. 7, 1898.—*Oregon* left Bremerton for San Francisco.

Mar. 9, 1898.—Commanders in chief of stations ordered to husband ammunition.

Mar. 12, 1898.—*Helena* and *Bancroft* ordered to the United States.

Mar. 14, 1898.—Commander in chief, European Station, ordered to take charge of *New Orleans* and *Albany*, purchased in England.

Mar. 15, 1898.—*Cincinnati*, *Castine*, and *Wilmington* ordered to proceed to Port Antonio, Jamaica.

Mar. 18, 1898.—*Massachusetts* and *Texas* ordered to proceed to Hampton Roads.

Mar. 22, 1898.—*Marietta* (on Pacific) ordered to precede the *Oregon* and arrange for coaling that vessel, which was en route to Key West.

Mar. 23, 1898.—Commander in chief, South Atlantic Station, ordered to proceed with squadron to Key West. *Wilmington* ordered to proceed to Jacksonville, Fla.

Mar. 23, 1898.—*Newport* ordered from Greytown, Nicaragua, to Key West.

Mar. 23, 1898.—Captain Sigsbee ordered to prepare for withdrawal of everything from Havana.

Apr. 2, 1898.—Captain Sigsbee ordered to leave Havana.

Apr. 4, 1898.—Orders issued for procedure in case censorship of telegraph lines at Key West should be ordered.

Apr. 7, 1898.—Oregon informed of critical situation.

Apr. 7, 1898.—All vessels ordered to land all woodwork and extra equipment.

Apr. 19, 1898.—Commander in chief, Pacific Station, ordered to proceed to the United States.

Apr. 21, 1898.—Service informed of blockade. War not declared. Commander in chief, North Atlantic Station, directed to blockade portion of northern coast of Cuba.

Apr. 23, 1898.—*Minneapolis* and *Columbia* ordered to the New England coast.

Apr. 24, 1898.—Orders issued to commander in chief, Asiatic Station, to proceed to Manila: "War has commenced between the United States and Spain. Proceed at once to Philippine Islands. Commence operations at once, particularly against Spanish fleet. You must capture vessels or destroy. Use utmost endeavors."

It will be seen that as a result of the foregoing orders the whole fleet was ready on April 15—four weeks before Admiral Cervera's fleet reached this side—for any emergency, gathered practically in two fleets, each within striking distance of one of the two points from which attack might come. Four months before the vessels were distributed much as in ordinary times. On April 15 all of the more powerful vessels were fully manned, the legal quota having been exceeded on account of the emergency.

The *Amphitrite* put into service at the beginning of the war 45 trained gun captains who had received exact training fit to match with the modern gun. These men afterwards gave a good account of themselves. The commanding officer of the *Scorpion* has reported in regard to certain ones who were on board that vessel at an action at Manzanillo, on July 18, in which four gunboats were destroyed, and in which the *Osceola* and *Wilmington* also participated:

* * * After running this gunboat on shore, to all appearances destroyed, this ship backed in and took the other three gunboats, which were south of the city, in the order in which they were lying. * * * In succession another gunboat was sunk and a third was set on fire and blown up. She had considerable ammunition on board.

So far the gunboats had made very slight resistance. * * * Not being able to reach the fourth gunboat where she lay, close inshore and near the city, without having the houses in range, the *Scorpion* was turned around, steamed in, and placed in position abreast of and close to this vessel. Orders were given to obtain the range with two of the 6-pounders, after which the first shell from the 5-inch gun blew her up, apparently having struck her boilers. * * *

There were no casualties on board the ship, nor was she hit.

In my opinion the successful result of this engagement is due, to a large extent, to the system of "gun captains" lately established in the Navy. The four on board this ship did splendid firing with decisive result. No doubt the want of a similar system in the Spanish navy accounts for the few casualties we have had during the present war.

Aside from these specially trained men, men in general service on board cruising ships had received, during the nine months preceding the outbreak of the war, better training and more experience at target practice than had been the case for many years previous. The old regulations for target practice which had been in force for years were superseded on July 22, 1897, by a new set of regulations which practically doubled the frequency of regular practice, making the practice simpler and less irksome, systematizing and increasing the facilities for preliminary training and subcaliber practice, and adapting the whole system to the conditions demanded by the accuracy of the modern rifle of the United States Navy.

It is the purpose of the Bureau to continue the training of gun cap-

tains on board such vessels as the Department may specially assign to this duty.

During the past year, and before the outbreak of the war, the Bureau had issued a new tactical signal book, adapted to the use of the new ships and drawn up upon lines which the experience of officers in the North Atlantic Squadron during the preceding two years had shown to be the best. The Gunnery Drill Book had also been revised and brought up to date; a boat signal book was published shortly before the war, as was also a drill manual for the 6-millimeter rifle. The nearly exhausted edition of the General Signal Book was called in, rebound, and reissued to ships before the war began. The Bureau will shortly replace this book with a new and more comprehensive General Signal Book, better adapted to modern ships.

The completeness of our naval victories during the war and the almost absolute immunity from injury which our ships and crews enjoyed naturally led to a general conclusion that our gunnery had much to do with the matter. As a matter of fact, all reports bear out this conclusion. The percentage of hits, smaller it is true than that which has been obtained at target practice, is modified by three conditions: in the first place, the demolition of the enemy's ships has usually been so complete that it is certain that the marks of many hits were obliterated by subsequent fires and explosions; in the second place, the ranges at which the combats have taken place have usually been so much greater than those which have been used in target practice, that this difference would account for a reduction of from 30 to 60 per cent in the percentage of hits; and finally, the rate of fire was much higher in the battles than at target practice. In this connection it is proper to note that it had been the endeavor of the Bureau during the year preceding the war to increase the rate of fire at target practice. When all is considered, it will be found that the "hits per gun per minute" have been remarkably high. In fact, it appears that the experience of each combat was that our marksmanship was so far superior that, at a range at which the Spanish guns and gunners were ineffective, our guns and gunners were so effective that before the range was or could be reduced the Spanish ships were either seriously crippled or their crews demoralized.

The experience of the war has been another demonstration of the importance to the nation of sea power. The Bureau will be pardoned this reference to a somewhat trite lesson when its importance is considered. It will, I think, be admitted that from the first the only apprehension in this country was on account of the Spanish navy. It was Cervera's ships that were feared. We did not fear the Spanish army—would not have feared it if it had been three times as powerful, unless it had been supported by a navy powerful enough to form an efficient convoy and bring it to our coast. On the contrary, the Spanish navy, even without any Spanish army, would have been a menace, though it had consisted of but one well-equipped cruiser. Until that cruiser had been blockaded, captured, or destroyed, any unprotected point on our coast and all of our sea-borne commerce would have been at its mercy, and no army, however efficient, could have protected us from it. It required a navy for this work, and an effective navy.

This subject also brings me to the question of those operations in which the Navy and Army are called upon to cooperate. Happily all points of difference which came up between the naval and military commanders in the late campaign were in the end solved satisfactorily by victory. Some of them were of no military importance. One glaring

defect of the system for joint operations was found, however, in the matter of transporting and conveying troops. There can be no question that all of this part of the campaign would have been more smoothly handled had the Navy been given by law and regulation that part of the work which naturally falls to it. Reports of the landing at Siboney, and a special report from Lieut. R. H. Miner, U. S. N. (in Appendix K), will be found to particularize as to these matters. The Bureau recommends that steps be taken to frame a bill putting this matter into the hands of the Navy, and that Congress be requested to pass such a bill.

Attention is invited to the recommendations of the superintendent of the Coast Signal Service in regard to establishing a permanent coast signal service. These recommendations are found in paragraphs 16 and 17 of the report, and are approved by the Bureau. Such a permanent system could be kept up at comparatively little cost, would be of value to many departments of the Government, and would furthermore be a skeleton around which a highly efficient system could be promptly built upon the outbreak of a war.

The recommendations of the Superintendent of the Naval Academy, "that the number of cadets allowed by law be increased by the repeal of 'An act regulating the appointment of cadet midshipmen and cadet engineers at the Naval Academy,' June 17, 1878, chapter 260, Supplement to Revised Statutes, volume 1, second edition, 1874 to 1891, and reenact section 1513, March 2, 1867, Revised Statutes of the United States, second edition, 1878, thus allowing 10 Presidential appointments annually, instead of 10 every six years," although its object—to increase the number of graduates of the Naval Academy—is approved, is itself disapproved, the same object being accomplished by reducing the Naval Academy course to four years, as provided by House bill No. 10403, previously referred to.

The recommendation of the commanding officer of the training station that additional accommodations be provided for apprentices at the training station is approved. The Bureau, however, has asked for but 2,500 apprentices, of which number eight or nine hundred would be under training on the Pacific coast, and of the sixteen or seventeen hundred that might be under training on the Atlantic coast, not more than 1,000 would be on shore at the training station at Newport at one time.

Preliminary plans for the training station on Yerba Buena Island, California, have been prepared at the direction of the Bureau, and it is probable that the contract for the necessary buildings can be let by December 1, 1898.

The recommendation of the commanding officer of the Naval Home, in paragraph 11 of his report, and which also is incorporated in his estimates, that the rating of water tender at the Naval Home be abolished and that the work in the fire room there be performed by three laborers, at a monthly compensation of \$30 each, is approved.

Very respectfully,

A. S. CROWNINSHIELD,
Chief of Bureau.

The SECRETARY OF THE NAVY.

A.

Movements of vessels.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Albatross, Commander W. C. GUNTON, commanding. [Out of commission Apr 30, 1894.]			Alliance, Commander H. N. MANN, commanding. etc.—Continued.		
Port Angeles, Wash.		1897.	Bar Harbor, Me.	1898.	1898.
Seattle, Wash.	July 2	July 1	Castine, Me.	Aug. 26	Aug. 29
Sequimiah, British Columbia	July 10	July 10	Rockland, Me.	Aug. 31	Sept. 2
Sausalito, Cal.	July 19	July 13	Boothbay, Me.	Sept. 3	Sept. 5
Mare Island, Cal.	July 20	July 20	Portland, Me.	Sept. 6	Sept. 10
Sausalito, Cal.	Aug. 21	Aug. 21	Gloucester, Mass.	Sept. 14	Sept. 19
San Diego, Cal.	Oct. 2	Oct. 4	At sea.	Sept. 23	Sept. 28
Do.	Oct. 7	Oct. 18			
Magdalena Bay.	Oct. 24	Nov. 21	Amphitrite, Capt. CHAS. J. RANCLAY, commanding. [Commissioned Oct. 2, 1897.]	1897.	
Hilo, Hawaiian Islands.	Dec. 14	Dec. 20	Norfolk, Va.		Oct. 2
		1898.	Sewells Point, Virginia.	Oct. 2	Oct. 4
Kona, Hawaiian Islands.	Dec. 22	Jan. 6	Hampton Roads, Virginia.	Oct. 4	Oct. 5
		1898.	New Bedford, Mass.	Oct. 7	Oct. 23
Sausalito, Cal.	Jan. 31	Feb. 1	Tompkinsville, N. Y.	Oct. 24	Nov. 15
Mare Island, Cal.	Feb. 1		Lamberts Point, Virginia.	Nov. 14	Nov. 16
Albatross, Lieut. Commander J. F. MCCAIG, commanding. [Transferred to Navy Department Apr 9, 1895.]			Port Royal, S. C.	Nov. 19	Dec. 23
Mare Island, Cal.		1898.	Charleston, S. C.	Dec. 23	1898.
San Francisco, Cal.	Apr. 26	Apr. 28	Port Royal, S. C.	1898.	
San Francisco, Cal.	June 27	June 27	Key West, Fla.	Jan. 1	Apr. 5
Mare Island, Cal.	July 7	July 7	Do.	Apr. 8	Apr. 27
San Francisco, Cal.	July 7	Aug. 11	Do.	Apr. 27	May 1
Acapulco, Mexico.	Aug. 23	Aug. 26	Do.	May 19	May 24
San Francisco, Cal.	Sept. 7	Sept. 8	Do.	June 9	June 27
Mare Island, Cal.	Sept. 8		Off Havana, Cuba.	June 28	
Alexander, Commander W. T. BROWN, commanding. [Commissioned June 2, 1894.]			Annapolis, Commander J. J. HUNTER, commanding. [Commissioned July 20, 1897.]	1897.	1897
New York, N. Y.		June 7	New York (navy yard)		Sept. 2
Norfolk, Va.	June 9	June 10	Hampton Roads, Virginia.	Sept. 3	Sept. 6
Hampton Roads, Virginia.	June 10	June 13	Do.	Sept. 8	Sept. 8
St. X. de las Molas, Haiti.	June 19	June 19	Key West, Fla.	Sept. 13	Sept. 15
Off Santiago de Cuba.	June 20	June 26	Charlotte Harbor, Fla.	Sept. 16	Sept. 20
Guantanamo, Cuba.	June 27	June 30	Port Tampa, Fla.	Sept. 21	Sept. 30
Norfolk, Va.	July 5	July 10	St. Petersburg, Fla.	Sept. 30	Oct. 11
Hampton Roads, Virginia.	July 10	Sept. 28	Key West, Fla.	Oct. 12	Oct. 13
Norfolk, Va.	Sept. 28		Do.	Oct. 18	Oct. 26
Alliance, Commander H. N. MANN, commanding. Relieved by Commander A. Ross, Jan. 4, 1898.			Do.	Nov. 1	Nov. 6
	1897.	1897.	Mayport, Fla.	Nov. 6	Nov. 8
Newport, R. I.		June 26	Newport, R. I.	Nov. 12	Nov. 27
Buckhampton, England.	July 27	Aug. 15	Tompkinsville, N. Y.	Nov. 24	Dec. 1
Charbourg, France.	Aug. 16	Aug. 25	Annapolis, Md.	Dec. 3	Dec. 9
Queensdown, Ireland.	Sept. 1	Sept. 8	Newport News, Va.	Dec. 10	Dec. 11
Gibraltar, Spain.	Sept. 17	Sept. 20			
Funchal, Madeira.	Sept. 26	Oct. 2	Barbados, West Indies.	Dec. 25	1898.
St. Thomas, Danish West In-					Jan. 6
dies.	Nov. 17	Nov. 23			
Key West, Fla.	Dec. 1	Dec. 15	Port de France, Martinique	1898.	
Tompkinsville, N. Y.	Dec. 22	Dec. 30	Basseterre, St. Christopher	Jan. 7	Jan. 7
			Frederickstedt, St. Croix.	Jan. 9	Feb. 2
			St. Thomas, Danish West In-	Feb. 3	Feb. 16
			dies.	Feb. 16	Feb. 24
			La Guaira, Venezuela.	Mar. 1	Mar. 10
			Curacao, Dutch West Indies	Mar. 11	Mar. 14
			Key West, Fla.	Mar. 29	Mar. 31
			Tompkinsville, N. Y.	Apr. 8	Apr. 8
			New York (navy yard)	do	Apr. 18
			Key West, Fla.	Apr. 25	Apr. 26
			Port Tampa, Fla.	Apr. 27	Apr. 28
			Key West, Fla.	Apr. 29	May 1
			Off Havana, Cuba.	May 2	May 21
			Key West, Fla.	May 23	May 30
			Port Tampa, Fla.	May 31	June 14
			Balquid Harbor, Cuba.	June 22	June 28
			Guantanamo, Cuba.	June 23	

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Apache , Lieut. EDWIN GERR, commanding. Relieved by Lieut. G. C. HANUS, July 8, 1898. [Commissioned June 11, 1898. Out of commission Sept. 24, 1898.]	1898.	1898.	Baltimore , Capt. N. M. DYER, commanding—Continued.	1898.	1898.
Norfolk, Va.	July 25	July 25	Lahaina, Hawaiian Islands ..	Mar. 17	Mar. 18
Hampton Roads, Virginia....	July 25	July 26	Honolulu, Hawaiian Islands..	Mar. 19	Mar. 25
Key West, Fla.	Aug. 4	Aug. 17	Yokohama, Japan	Apr. 11	Apr. 15
Hampton Roads, Virginia....	Aug. 22	Sept. 17	Hongkong, China	Apr. 23	Apr. 25
Norfolk, Va.	Sept. 17		Mira Bay	Apr. 25	Apr. 27
Arctic , Lieut. G. C. STOUT, commanding. [Commissioned July 9, 1898. Out of commission Aug. 23, 1898.]	1898.	1898.	Manila, Philippine Islands ..	May 1	May 17
League Island, Pa.	July 29	July 28	Do	June 30	
New Castle, Del.	July 30	July 31	Bancroft , Lieut. Commander C. H. ARNOLD, commanding. Relieved by Lieut. Commander J. V. B. BLECKER, Dec. 12, 1897. Relieved by Lieut. T. E. DEW VEDER, Apr. 27, 1898. Relieved by Commander R. C. LOVER, May 2, 1898. Sept. 22, 1898. Lieut. W. TRUXTON in command.	-	
Delaware Breakwater, Del. ...	July 31	Aug. 1	[Out of commission Sept. 30, 1898.]	1897.	1897.
Lewes, Del.	Aug. 1	Aug. 11	Mersina, Asia Minor	June 21	July 23
Delaware Breakwater, Del. ...	Aug. 11	Aug. 16	Karadash, Asia Minor	July 23	July 24
New Castle, Del.	Aug. 16		Smyrna, Asia Minor	July 23	Aug. 13
League Island, Pa.			Mytilene, Mytilene	Aug. 12	Aug. 19
Armeria , Commander R. RUSH, commanding. Relieved by Lieut. Commander L. C. LOGAN, May 10, 1898. [Transferred to Navy Department Mar. 24, 1898. Returned to Treasury Department Aug. 11, 1898.]	1898.	1898.	Port Iero, Mytilene	Aug. 19	Aug. 21
Norfolk, Va.	June 4	May 30	Port Sigr, Mytilene	Aug. 21	Aug. 23
Key West, Fla.	June 14	June 7	Kastra, Chios	Aug. 23	Sept. 1
Off Santiago, Cuba	June 19	June 16	Port Vathi, Samos	Sept. 1	Sept. 9
Key West, Fla.	June 28	June 23	Tigani, Samos	Sept. 9	Sept. 19
New York, N. Y.	July 15	July 15	Hermopolis, Syra	Sept. 11	Sept. 28
Hampton Roads, Virginia....	July 17	July 17	Naxos, Naxos	Sept. 29	Sept. 30
Norfolk, Va.	July 21	July 21	Smyrna, Asia Minor	Oct. 1	Nov. 13
Guantanamo, Cuba	July 26	Aug. 8	Piræus, Greece	Nov. 13	Nov. 21
Key West, Fla.	Aug. 9		Salamis, Greece	Nov. 21	Nov. 23
Badger , Commander A. S. SNOW, commanding. [Commissioned Apr. 25, 1898.]	1898.	1898.	Piræus, Greece	Nov. 23	Dec. 3
New York, N. Y.	June 9	June 7	Smyrna, Asia Minor	Dec. 4	Dec. 19
Provincetown, Mass.	June 12	June 12	Vourlah Bay, Asia Minor	Dec. 16	Dec. 17
Boston, Mass.	June 13	June 13		1898.	1898.
Do.	do	do	Smyrna, Asia Minor	Dec. 17	Jan. 7
Bar Harbor, Me.	June 15	June 15	Vourlah Roads, Turkey	Jan. 7	Jan. 8
Do.	June 16	June 17	Bmyrna, Asia Minor	Jan. 8	Jan. 19
Do.	June 17	June 18	Genoa, Italy	Jan. 25	Feb. 9
Do.	June 18	June 20	Lisbon, Portugal	Feb. 12	Mar. 13
Do.	June 21	June 22	Fayal, Azores	Mar. 17	Mar. 18
Portland, Me.	June 22	June 26	Grassy Bay, Bermuda	Mar. 29	Mar. 31
Key West, Fla.	July 1	July 3	Boston, Mass.	Apr. 4	Apr. 30
Off Havana, Cuba	July 4	July 11	Norfolk, Va.	May 2	May 4
Off Nuevitas, Cuba	July 12	July 28	Key West, Fla.	May 9	May 13
Dry Tortugas, Fla.	July 30	Aug. 3	Do.	May 17	May 17
Key West, Fla.	Aug. 3	Aug. 7	Tampa, Fla.	May 18	May 24
Guantanamo, Cuba	Aug. 9	Aug. 18	Key West, Fla.	May 25	May 28
Montauk Point, N. Y.	Aug. 23	Aug. 26	Tampa, Fla.	May 27	May 30
Boston, Mass.	Aug. 27	Sept. 26	Key West, Fla.	May 30	June 1
League Island, Pa.	Sept. 28		Do.	June 12	June 14
Baltimore , Capt. N. M. DYER, commanding. [Commissioned Oct. 12, 1897.]	1897.	1897.	Santiago de Cuba	June 20	June 21
Mare Island, Cal.	Oct. 21	Oct. 30	Altarea, Cuba	June 22	June 23
San Francisco, Cal.		1898.	Guantanamo, Cuba	June 23	June 28
Honolulu, Hawaiian Islands..	Nov. 7	Jan. 24	Sagua la Grande, Cuba	June 30	July 1
Lahaina, Hawaiian Islands ..	Jan. 24	Jan. 29	Havana, Cuba	July 2	July 13
Honolulu, Hawaiian Islands..	Jan. 29	Mar. 17	Key West, Fla.	July 14	July 15
			Isle of Pines, Cuba	July 28	Aug. 9
			Key West, Fla.	Aug. 11	Aug. 17
			Charleston, S. C.	Aug. 21	Aug. 26
			Hampton Roads, Virginia	Aug. 27	Aug. 29
			Provincetown, Mass.	Sept. 1	Sept. 1
			Boston, Mass.	Sept. 2	
			Bennington , Commander H. E. NICHOLS, commanding. Relieved by Commander E. D. TAUSIG, Aug. 19, 1898.	1897.	1897.
			Mare Island, Cal.	July 26	July 28
			San Francisco, Cal.	Aug. 1	Aug. 14
			San Diego, Cal.	Aug. 23	Sept. 2
			Honolulu, Hawaiian Islands..		

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Boulington, Commander H. E. NICHOLS, commanding, etc.—Continued.			Sacramento, Lieut. H. K. HINNA, commanding. Relieved by Lieut. A. N. MAYER, June 23, 1898.		
Lahaina, Hawaiian Islands...	1897 Sept. 27	1897. Sept. 29	[Commissioned June 13, 1898. Out of commission Sept. 12, 1898.]		
Honolulu, Hawaiian Islands	Sept. 30	1898. Mar. 4			
Lahaina, Hawaiian Islands	1898. Mar. 4	Mar. 6		1898.	1898.
Honolulu, Hawaiian Islands	Mar. 10	June 16	Port Tampa, Fla.		Aug. 5
San Francisco, Cal.	June 26	June 28	Key West, Fla.	Aug. 6	Aug. 18
Mare Island, Cal.	June 28	July 8	Hampton Roads, Virginia	Aug. 22	Sept. 4
San Francisco, Cal.	July 8	July 14	New York, N. Y.	Sept. 5	
Port Townsend, Wash.	July 18	July 19			
Seattle, Wash.	July 19	July 21	Calumet, W. H. CUSHING, First Lieut., R. C. S., commanding.		
Port Orchard, Wash.	July 31	Aug. 8			
Seattle, Wash.	Aug. 8	Aug. 11	[Transferred to the Navy Department June 26, 1898. Returned to the Treasury Department August 27, 1898.]		
San Francisco, Cal.	Aug. 14	Sept. 3			
Mare Island, Cal.	Sept. 3	Sept. 8		1898	1898.
San Francisco, Cal.	Sept. 8	Sept. 9	Provincetown, Mass.		June 26
Mare Island, Cal.	Sept. 9	Sept. 15	Boston, Mass.	June 26	Do.
San Francisco, Cal.	Sept. 15	Sept. 18	Provincetown, Mass.	June 30	June 30
Honolulu, Hawaiian Islands	Sept. 27		Navy yard, New York	July 3	July 7
			Delaware Breakwater, Del.	July 7	July 8
Boston, Capt. FRANK WILKES, commanding.			Norfolk, Va.	July 8	July 10
	1897	1897	Hampton Bar, Virginia	July 10	July 13
Nagasaki, Japan.	May 4	July 7	Charleston, S. C.	July 16	July 17
Kobe, Japan.	July 9	July 28	Fernandina, Fla.	July 17	July 18
Chefoo, China.	Aug. 4	Sept. 25	Sombrero Key, Fla.	July 20	July 21
Cheumipo, Korea.	Sept. 26	Dec. 1	Key West, Fla.	July 21	July 28
Nagasaki, Japan.	Dec. 3	Dec. 15	Port Tampa, Fla.	July 30	July 31
		1898.	Key West, Fla.	Aug. 1	Aug. 11
Cheumipo, Korea.	Dec. 17	Feb. 29	Off Havana, Cuba.	Aug. 11	Do.
	1898.		Key West, Fla.	do	Aug. 12
Hongkong, China.	Mar. 3	Apr. 24	St. Petersburg, Fla.	Aug. 17	Aug. 14
Mine Bay.	Apr. 24	Apr. 27	Key West, Fla.	Aug. 18	Aug. 16
Cavite, Philippine Islands.	May 1		Charleston, S. C.	Aug. 18	Aug. 20
			Haven Roads, Virginia.	Aug. 21	Aug. 22
Brooklyn, Capt. F. A. COOK, commanding.			Norfolk, Va.	Aug. 22	
	1897.	1897			
Southampton, England.	June 27	July 6	Castine, Commander R. M. BERRY, commanding.		
Tompkinsville, N. Y.	July 17	Aug. 2			
Newport, R. I.	Aug. 3	Aug. 11	Buenos Ayres, Argentine Republic	1897. June 19	1897. July 14
Provincetown, Mass.	Aug. 12	Aug. 14	Dos Hermanos, Argentine Republic	July 16	July 21
Portsmouth, N. H.	Aug. 15	Aug. 16	Rosario, Argentine Republic	July 21	July 30
Furthard, Me.	Aug. 17	Aug. 23	Dos Hermanos, Argentine Republic	July 30	Aug. 7
Bar Harbor, Me.	Aug. 24	Aug. 31	Colonla, Uruguay.	Aug. 8	Aug. 16
Hampton Roads, Virginia.	Sept. 11	Sept. 13	Montevideo, Uruguay.	Aug. 10	Sept. 13
Newport News, Va.	Sept. 13	Sept. 19	Chico Bank, Rio de la Plata.	Sept. 13	Sept. 18
Hampton Roads, Virginia.	Sept. 19	Sept. 27	Buenos Ayres, Argentine Republic	Sept. 18	Oct. 8
Yorktown, Va.	Sept. 27	Oct. 4	Montevideo, Uruguay.	Oct. 8	Oct. 22
Hampton Roads, Virginia.	Oct. 4	Oct. 13	Maldonado, Uruguay.	Oct. 23	Oct. 26
Boston, Mass.	Oct. 15	Oct. 22	Montevideo, Uruguay.	Oct. 26	Dec. 12
Tompkinsville, N. Y.	Oct. 24	Oct. 28	Chico Bank.	Dec. 12	Dec. 18
		1898.			
New York (navy-yard)	Oct. 28	Feb. 4	Montevideo, Uruguay.	Dec. 18	1898. Jan. 24
	1898.				
Hampton Roads, Virginia.	Feb. 5	Feb. 6		1898.	
Macoris, San Domingo.	Feb. 10	Feb. 12	Rio de Janeiro, Brazil.	Jan. 31	Feb. 1
San Domingo City, San Domingo.	Feb. 12	Feb. 17	Pernambuco, Brazil.	Feb. 8	Feb. 9
St. Thomas, Danish West Indies.	Feb. 18	Feb. 23	Para, Brazil.	Feb. 15	Feb. 19
St. Cruz, Danish West Indies.	Feb. 22	Feb. 24	Bridgetown, Barbados.	Feb. 25	Feb. 27
St. Lucia, British West Indies.	Feb. 26	Mar. 2	Port de France, Martinique.	Feb. 28	Mar. 7
La Guaira, Venezuela.	Mar. 4	Mar. 7	Port Castries, St. Lucia.	Mar. 7	Mar. 8
Hampton Roads, Virginia.	Mar. 14	Mar. 15	Bridgetown, Barbados.	Mar. 9	Mar. 16
Newport News, Va.	Mar. 15	Apr. 5	Port Castries, St. Lucia.	Mar. 17	Mar. 17
Hampton Roads, Virginia.	Apr. 5	Apr. 13	Port Antonio, Jamaica.	Mar. 21	Mar. 23
Do.	Apr. 15	May 13	Key West, Fla.	Mar. 26	Apr. 21
Key West, Fla.	May 18	May 19	Do.	May 3	May 5
Cienfuegos, Cuba.	May 22	May 25	Navassa Island.	May 9	May 9
Santiago de Cuba.	May 28	July 4	Key West, Fla.	May 12	May 19
Guantanamo, Cuba.	July 4	July 7	Do.	May 28	May 31
Santiago de Cuba.	July 7	July 23			
Guantanamo, Cuba.	July 23	Aug. 14			
Tompkinsville, N. Y.	Aug. 20	Sept. 14			
Newport, R. I.	Sept. 15	Sept. 20			
Tompkinsville, N. Y.	Sept. 31				

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Castine, Commander R. M. BERRY, commanding—Continued.	1898.	1898.	Cincinnati, Capt. C. M. CARTER, commanding.	1897.	1897.
Tampa, Fla.....	June 2	June 14	Bermudas	July 7	July 9
Guantanamo, Cuba.....	June 24	June 28	Hampton Roads, Virginia	July 11	July 15
Off Havana, Cuba.....	July 2	July 4	Tolchester, Md	July 16	July 21
Bahia Honda, Cuba.....	July 6	July 14	New York, N. Y.....	July 26	Sept. 10
Off Havana, Cuba.....	July 14	July 15	Bermudas	Sept. 19	Sept. 21
Key West, Fla	July 15	July 25	St. Lucia, West Indies.....	Sept. 27	Sept. 28
Do	Aug. 14	Aug. 17	Barbados, British West Indies	Sept. 29	Oct. 5
Hampton Roads, Virginia	Aug. 21	Aug. 29	Pernambuco, Brazil	Oct. 16	Oct. 23
Provincetown, Mass.....	Sept. 1	Sept. 2	Rio de Janeiro, Brazil	Oct. 28	Nov. 23
Boston, Mass.....	Sept. 2		Montevideo, Uruguay	Nov. 27	Nov. 30
				1898.	1898.
Catskill, Lieut. M. E. HALL, commanding. Relieved by Lieut. J. O. PORTER, July 18, 1898.			Buenos Ayres, Argentina	Dec. 1	Jan. 4
[Commissioned Apr. 16, 1898. Out of commission Sept. 22, 1898.]	1898.	1898.	Montevideo, Uruguay	Jan. 4	Jan. 18
League Island, Pa.....	Apr. 24	Apr. 24	Buenos Ayres, Argentina	Jan. 19	Jan. 25
Gloucester, Mass.....	Apr. 30	Aug. 11	Montevideo, Uruguay	Jan. 26	Jan. 27
Boston, Mass.....	Aug. 11	Aug. 12	Bahia, Brazil	Feb. 3	Feb. 6
Marblehead, Mass.....	Aug. 12	Aug. 13	Pars, Brazil	Feb. 12	Feb. 15
Gloucester, Mass.....	Aug. 13	Aug. 16	Barbados, British West Indies	Feb. 23	Mar. 17
Marblehead, Mass.....	Aug. 16	Sept. 5	Port Antonio, Jamaica	Mar. 21	Mar. 23
Gloucester, Mass.....	Sept. 5	Do.	Key West, Fla	Mar. 29	Apr. 1
Marblehead, Mass.....	do	Sept. 7	Do	Apr. 3	Apr. 5
New Castle, Del.....	Sept. 10	Sept. 11	Do	Apr. 6	Apr. 9
League Island, Pa.....	Sept. 11		Do	Apr. 10	Apr. 14
			Do	Apr. 16	Apr. 19
			Do	Apr. 21	Apr. 21
Celtic, Lieut. Commander W. J. K. PATCH, commanding.			Off Havana, Cuba	do	Apr. 23
[Commissioned May 25, 1898.]	1898.	1898.	Off Matanzas, Cuba.....	Apr. 22	May 1
New York (navy-yard).....	June 11	June 11	Key West, Fla	May 1	May 16
Off Cape Charles	June 12	June 13	Off Cape San Antonio.....	May 17	May 21
Off St. Nicolas Mole.....	June 18	June 18	Key West, Fla	May 23	May 24
Off Santiago de Cuba.....	June 19	June 24	Old Bahama Channel	May 27	May 30
Guantanamo, Cuba	June 24	June 28	Lambert Point, Virginia	June 2	June 3
Off Santiago de Cuba.....	June 26	July 2	Norfolk (navy yard)	June 3	July 10
Guantanamo, Cuba	July 2	July 4	Hampton Roads, Virginia.....	July 10	July 11
Off Santiago de Cuba.....	July 4	July 5	Key West, Fla	July 15	July 19
Guantanamo, Cuba	July 6	July 15	Off Havana, Cuba.....	July 20	July 22
Off Santiago de Cuba.....	July 15	July 17	Guantanamo, Cuba.....	July 23	July 24
Guantanamo, Cuba	July 17	July 30	San Juan, Porto Rico.....	July 26	July 27
Tompkinsville, N. Y.....	Aug. 5	Aug. 8	Ponce, Porto Rico	July 28	Aug. 3
New York (navy yard).....	Aug. 6	Aug. 16	Arroyo Bay, Porto Rico.....	Aug. 2	Aug. 7
Key West, Fla	Aug. 22	Aug. 22	Ponce, Porto Rico	Aug. 7	Do.
Hampton Roads, Virginia	Aug. 26	Aug. 28	Off Cape San Juan	Aug. 8	Aug. 9
Tompkinsville, N. Y.....	Aug. 29	Sept. 2	San Juan, Porto Rico.....	Aug. 9	Aug. 13
Newport, R. I.	Sept. 10	Sept. 21	Cape San Juan anchorage.....	Aug. 13	Do.
New York (navy-yard)	Sept. 23	Sept. 25	San Juan, Porto Rico	do	Aug. 16
Erie Basin, New York.....	Sept. 25	Sept. 26	St. Thomas, Danish West Indies	Aug. 17	Aug. 27
New York (navy-yard).....	Sept. 26		Culebrita Island	Aug. 23	Aug. 23
			Great Harbor, Culebra	Aug. 23	Aug. 26
Charleston, Capt. HENRY GLASS, commanding.			St. Thomas, Danish West Indies	Aug. 24	Sept. 7
[Commissioned May 5, 1898.]	1898.	1898.	Port San Juan	Sept. 7	Sept. 17
Mare Island, Cal.....	May 21	May 21	St. Thomas, Danish West Indies	Sept. 17	Sept. 18
Honolulu, Hawaiian Islands	June 4	June 4	Port San Juan	Sept. 19	
San Luis d'Apra, Guam	June 20	June 22	City of Peking, Commander W. C. GIBSON, commanding.		
Cavite, Philippine Islands	June 30		[Commissioned May 10, 1898. Out of commission Sept. 1, 1898.]	1898.	1898.
			San Francisco, Cal	June 1	May 25
Cheyenne, Lieut. GEO. H. SWAN, commanding.			Honolulu, Hawaiian Islands	June 20	June 4
[Out of commission Aug. 29, 1898.]	1898.	1898.	San Luis d'Apra, Guam	June 30	July 20
Charleston, S. C.....	July 30	July 30	Manila, Philippine Islands	Aug. 4	Aug. 9
Key West, Fla	Aug. 3	Aug. 12	Nagasaki, Japan	Aug. 23	
St. Petersburg, Fla	Aug. 13	Aug. 14	San Francisco, Cal		
Key West, Fla	Aug. 16	Aug. 18	Choctaw, Lieut. W. O. HULME, commanding.		
Port Royal, S. C.....	Aug. 21		[Commissioned Apr. 19, 1898. Out of commission Aug. 26, 1898.]	1898.	1898.
			Pensacola, Fla		June 11

Movements of vessels—Continued.

Name of vessel and port visited	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Charlow, Lieut. W. O. HELMS, commanding—Continued.	1896.	1896.	Concord, Commander ASA WALKER, commanding—Continued.	1897.	1897.
Port Eads, La.	June 11	July 2	Sitka, Alaska.	Aug 30	Nov. 11
New Orleans, La.	July 2	July 6	Killisnoo, Alaska.	Nov. 11	Nov. 12
Port Eads, La.	July 4	July 7	Port Wrangell, Alaska.	Nov. 12	Nov. 13
Galveston, Tex.	July 8	Aug. 1	Simpson Port, Alaska.	Nov. 13	Nov. 14
Pensacola, Fla.	Aug. 3		Swanson Bay, B. C.	Nov. 14	Nov. 15
Colombia, Capt. J. H. SANDS, commanding.	1896.	1896.	Safety Cove, Alaska.	Nov. 15	Nov. 16
League Island, Pa.		Mar. 28	Alert Bay, Alaska.	Nov. 16	Nov. 17
Hampton Roads, Virginia.	Mar. 31	Apr. 2	Comox, British Columbia.	Nov. 17	Nov. 19
Newport News, Va.	Apr. 3	Apr. 4	Departure Bay, British Columbia.	Nov. 19	Nov. 20
Hampton Roads, Virginia.	Apr. 4	Apr. 13	Victoria (Esquimaux).	Nov. 20	Nov. 23
Do.	Apr. 15	Apr. 15	San Francisco, Cal.	Nov. 20	Nov. 29
Newport News, Va.	do	Apr. 17	Mare Island, Cal.	Nov. 29	1898.
Hampton Roads, Virginia.	Apr. 17	Apr. 23			Jan. 3
Newport, R. I.	Apr. 25	Apr. 26		1898.	
Boston, Mass.	Apr. 27	Apr. 28	Honolulu, Hawaiian Islands.	Jan. 17	
Provincetown, Mass.	Apr. 28	Apr. 30	Yokohama, Japan.	Feb. 9	Jan. 23
Farmington, N. H.	Apr. 30	May 2	Chemulpo, Korea.	Feb. 26	Feb. 19
Portland, Me.	May 2	May 3	Hongkong, China.	Mar. 4	Feb. 28
Ba Harbor, Me.	May 3	May 4	Mira Bay, China.	Apr. 24	Apr. 24
Eastport, Me.	May 4	Do.	Manila Bay, Philippine Islands.	May 1	Apr. 27
Provincetown, Mass.	May 5	May 6			
Boston, Mass.	May 6	May 13	Cushing, Lieut. ALBERT GLEAVES, commanding.		
Delaware Breakwater, Delaware.	May 16	May 17	Relieved by Naval Cadet D. F. BOYD, Sept. 12, 1898.		
Do.	May 18	May 18		1897.	1897.
Tombkinsville, N. Y.	May 19	May 23	New Haven, Conn.	July 8	July 8
Delaware Breakwater, Delaware.	May 23	May 23	Newport, R. I.	July 9	July 9
Block Island, R. I.	May 24	May 24	Bristol, R. I.	July 12	July 12
Do.	May 27	May 28	Dutch Island, Rhode Island.	July 15	July 15
New York, N. Y.	May 29	June 19	Newport, R. I.	do	do.
Delaware Breakwater, Delaware.	June 20	June 20	Dutch Island, Rhode Island.	July 16	July 16
Block Island, R. I.	June 21	June 23	Newport, R. I.	do	do.
Delaware Breakwater, Delaware.	June 23	June 23	Potters Cove.	July 30	July 30
Block Island, R. I.	June 24	June 24	Newport, R. I.	do	do.
Delaware Breakwater, Delaware.	June 25	June 25	Whitewater, Long Island.	Aug. 1	Aug. 1
Block Island, R. I.	June 26	June 26	South Amboy, N. J.	Aug. 2	Aug. 2
Key West, Fla.	June 30	July 3	New York, N. Y.	do	do.
Charleston, S. C.	July 6	July 9	Newport, R. I.	Aug. 3	Aug. 2
Off Santiago de Cuba.	July 11	July 16	Dutch Island, Rhode Island.	Aug. 4	Aug. 4
Guantanamo Bay, Cuba.	July 16	July 21	Newport, R. I.	do	do.
Mole St. Nicholas, Haiti.	July 22	July 23	Sag Harbor, Long Island.	Aug. 5	Aug. 5
Guánica, Porto Rico.	July 25	July 26	Noyack Bay, Long Island.	Aug. 6	Aug. 6
St. Thomas, Danish West Indies.	July 26	July 30	Newport, R. I.	do	do.
Port Ponce, Porto Rico.	July 30	Aug. 3	Bristol, R. I.	Aug. 7	Aug. 7
Guánica, Porto Rico.	Aug. 3	Aug. 4	Newport, R. I.	do	do.
Port Ponce, Porto Rico.	Aug. 4	Aug. 16	Dutch Island, Rhode Island.	Aug. 9	Aug. 9
Key West, Fla.	Aug. 21	Aug. 23	Newport, R. I.	do	Aug. 11
Delaware Breakwater, Delaware.	Aug. 25	Aug. 26	Do.	Aug. 13	Aug. 20
League Island, Pa.	Aug. 26		Bristol, R. I.	Aug. 20	do.
Concord, Commander ASA WALKER, commanding.	1897.	1897.	Newport, R. I.	do	Aug. 23
Aten.	July 1		Noyack Bay, Long Island.	Aug. 23	do.
Port Angeles, Wash.	July 2	July 20	Sag Harbor, Long Island.	do	Aug. 24
Victoria, British Columbia.	July 20	Do.	Noyack Bay, Long Island.	Aug. 25	Aug. 25
Departure Bay, British Columbia.	do	July 21	Newport, R. I.	do	Sept. 26
Port Alexander, British Columbia.	July 21	July 22	New York, N. Y.	Sept. 26	Oct. 1
Caglan Anchorage, British Columbia.	July 22	July 23	Tompkinsville, N. Y.	Oct. 1	Oct. 2
New Metlakatla, Alaska.	July 23	July 24	Lewes, Del.	Oct. 2	Oct. 6
Sitka, Alaska.	July 25	Aug. 15	Assateague Inlet, Virginia.	Oct. 6	Oct. 7
Killisnoo, Alaska.	Aug. 15	Aug. 16	Hampton Roads, Virginia.	Oct. 7	Oct. 8
Jensen, Alaska.	Aug. 16	Aug. 27	Southern Drill Grounds.	Oct. 9	Oct. 9
Douglas City, Alaska.	Aug. 27	Do.	Hampton Roads, Virginia.	do	Oct. 11
Jensen, Alaska.	do	Aug. 29	Norfolk, Va.	Oct. 11	Oct. 12
Outer Island, Alaska.	Aug. 29	Aug. 30	Hampton Roads, Virginia.	Oct. 12	Oct. 13
			Annapolis, Md.	Oct. 13	Oct. 15
			Hampton Roads, Virginia.	Oct. 15	Oct. 18
			Norfolk, Va.	Oct. 18	Oct. 22
			Hampton Roads, Virginia.	Oct. 23	do.
			City Point, Va.	do	Oct. 24
			Richmond, Va.	Oct. 24	Oct. 27
			Newport News, Va.	Oct. 27	Oct. 28
			Norfolk, Va.	Oct. 28	Nov. 3

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Cushing, Lieut. ALBERT GLEAVES, commanding, etc.—Continued	1897.	1897.	Detroit, Commander J. H. DAYTON, commanding—Continued.	1898.	1898.
Wilmington N. C.	Nov. 4	Nov. 6	Mobile Bay, Alabama	Feb. 14	Feb. 15
Charleston, S. C.	Nov. 6	Nov. 19	Mobile Ala.	Feb. 16	Feb. 23
Port Royal, S. C.	Nov. 19	Nov. 14	Sand Key anchorage, Florida	Feb. 25	Feb. 26
Savannah, Ga.	Nov. 24	Dec. 1	Key West, Fla.	Feb. 26	Feb. 28
St. Catherine's Inlet	Dec. 1	Dec. 5	Dry Tortugas, Fla.	Feb. 28	Mar. 1
Bruswick, Ga.	Dec. 5	Dec. 8	Key West, Fla.	Mar. 1	Mar. 15
Fernandina, Fla.	Dec. 8	Dec. 9	Dry Tortugas, Fla.	Mar. 18	Mar. 19
Jacksonville, Fla.	Dec. 9	Dec. 18	Sand Key anchorage	Mar. 16	Mar. 20
St. Augustine, Fla.	Dec. 18	Dec. 28	Key West, Fla.	Mar. 20	Apr. 4
Cape Canaveral.	Dec. 28	Dec. 29	Dry Tortugas, Fla.	Apr. 5	Apr. 6
Cape Florida	Dec. 29	Dec. 30	Key West, Fla.	Apr. 7	Apr. 8
Miami, Fla.	Dec. 30	Dec. 31	Do	Apr. 9	Apr. 12
			Do	Apr. 13	Apr. 15
			Do	Apr. 19	Apr. 21
			Do	Apr. 22	Apr. 23
			Do	Apr. 22	Apr. 23
			Off Havana, Cuba	do	Apr. 24
			Key West, Fla.	Apr. 27	do
			Off Havana, Cuba	Apr. 29	May 1
			Key West, Fla.	May 1	May 3
			Off Havana, Cuba	May 4	May 6
			Off San Juan, Porto Rico	May 12	May 13
			Key West, Fla.	May 19	May 23
			Do	June 1	June 1
			Do	June 12	June 14
			Off Baiquiri, Cuba	June 22	June 24
			Guantanamo Bay, Cuba	June 24	June 27
			Off Baiquiri, Cuba	June 27	June 28
			Off Cienfuegos, Cuba	June 30	July 14
			Guantanamo Bay, Cuba	July 16	Aug. 12
			Cay Frances, Cuba	Aug. 14	Aug. 14
			Between Isle of Pines and Cuba	do	Aug. 16
			Key West, Fla.	Aug. 18	Aug. 19
			Hampton Roads, Virginia	Aug. 23	Aug. 29
			Provincetown, Mass.	Sept. 1	Sept. 2
			Boston, Mass.	Sept. 2	
			Dixie, Commander C. H. DAVIS, commanding, Relieved by Lieut. G. A. MERRIAM.		
			[Commissioned Apr. 19, 1898.]	1898.	1898.
			Newport News, Va.	May 27	May 27
			Hampton Roads, Virginia	May 31	May 30
			Do	May 31	June 11
			Lynn Haven Bay, Virginia.	June 11	June 12
			Mole St. Nicolas, Haiti	June 18	June 18
			Santiago de Cuba	June 19	June 19
			Cape Cruz, Cuba	June 20	June 20
			Cienfuegos, Cuba	June 21	July 1
			Cape Cruz, Cuba	July 3	July 7
			Guantanamo, Cuba.	July 8	July 21
			San Juan, Porto Rico	July 24	July 25
			Guánica, Porto Rico	July 26	July 27
			Ponce, Porto Rico	July 27	July 28
			St. Thomas, Danish West Indies	July 29	July 30
			Ponce, Porto Rico	July 31	Aug. 1
			Guantanamo, Cuba	Aug. 3	Aug. 11
			Cape San Domingo	Aug. 13	Aug. 14
			Guantanamo, Cuba	Aug. 15	Aug. 24
			Hampton Roads, Virginia	Aug. 28	Sept. 10
			Baltimore, Md.	Sept. 11	Sept. 30
			League Island (navy-yard)	Sept. 23	
			Dolphin, Commander H. W. LYON, commanding		
			[Out of commission Nov. 24, 1897, recommissioned Mar. 24, 1898.]		1897.
			Boston, Mass.	June 27	July 8
			Washington, D. C.	July 12	July 24
			Norfolk, Va.	July 28	July 25
			Hampton Roads, Virginia	do	July 26
Detroit, Commander J. H. DAYTON, commanding.	1897.	1897.			
New York (navy yard)	May 21	Oct. 10			
Key West, Fla.	Oct. 16	Oct. 20			
Puerto Cortes, Honduras	Oct. 24	Oct. 25			
Livingston, Guatemala	Oct. 25	Nov. 2			
Florida Bay	Nov. 5	Nov. 5			
Key West, Fla.	Nov. 6	Dec. 16			
Port au Prince, Haiti	Dec. 20	Dec. 26			
Port Antonio, Jamaica	Dec. 27	Dec. 29			
San Domingo City, San Domingo.	1898.	1898.			
San Domingo	Dec. 31	Jan. 3			
San Pedro de Macoris, San Domingo.	1898.	1898.			
San Pedro de Macoris	Jan. 3	Jan. 4			
Santa Barbara, San Domingo	Jan. 5	Jan. 7			
Porto Plata, San Domingo	Jan. 8	Jan. 8			
Cape Haitien, Haiti	Jan. 9	Jan. 11			
Key West, Fla.	Jan. 14	Jan. 23			
Sand Key Light, Florida	Jan. 23	Jan. 24			
Dry Tortugas, Fla.	Jan. 25	Jan. 27			
Do	Jan. 29	Feb. 5			
Middle Rendevous, Florida Bay.	Feb. 5	Feb. 7			
Key West, Fla.	Feb. 8	Feb. 12			

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Dolphin, Commander H. W. Lyon, commanding—Cont'd.			Dorothea, Lieut. Commander W. J. BARNETT, commanding, etc. Continued		
	1897.	1897.		1898.	1898.
Annapolis, Md.	July 26	July 28	Hatteras Cove.	June 17	June 18
Totopkinsville, N. Y.	July 29	Aug. 1	Port Royal, S. C.	June 20	June 28
New London, Conn.	Aug. 1	Aug. 3	Key West, Fla.	June 30	July 16
Newport, R. I.	Aug. 3	Aug. 6	Off Havana, Cuba.	July 17	July 17
Cottage City, Mass.	Aug. 6	Aug. 7	Key West, Fla.	do	Aug. 21
Boston, Mass.	Aug. 7	Aug. 12	Port Royal, S. C.	Aug. 24	Aug. 26
Portland, Me.	Aug. 12	Aug. 14	Hampton Roads, Virginia.	Aug. 26	
Rockland, Me.	Aug. 14	Aug. 17			
Ile au Haut, Me.	Aug. 17	Do.	De Pont, Lieut. SPENCER S. WOOD, commanding.		
Kimballe Island, Me.	do	Aug. 18	[Commissioned Sept. 23, 1898.]	1897.	1897.
Ile au Haut, Me.	Aug. 18	Aug. 20	Newport, R. I.	Aug. 28	Sept. 26
Bar Harbor, Me.	Aug. 20	Aug. 23	New York (navy-yard)	Sept. 26	Oct. 7
Seal Harbor, Me.	Aug. 23	Do.	Hampton Roads, Virginia.	Oct. 7	Oct. 8
Do.	do	Aug. 24	Do.	Oct. 9	Oct. 13
Bar Harbor, Me.	Aug. 24	Aug. 26	Annapolis, Md.	Oct. 13	Oct. 15
Do.	Aug. 26	Aug. 29	Hampton Roads, Virginia.	Oct. 15	Oct. 16
Belfast, Me.	Aug. 29	Aug. 30	Norfolk, Va.	Oct. 16	Oct. 22
Rockland, Me.	Aug. 30	Do.	Hampton Roads, Virginia.	Oct. 22	Oct. 23
Portland, Me.	do	Sept. 2	City Point, Va.	Oct. 23	Oct. 24
Fortress Monroe, Va.	Sept. 4	Sept. 7	Richmond, Va.	Oct. 24	Oct. 27
Cruising Ground.	Sept. 7	Sept. 9	Newport News, Va.	Oct. 27	Oct. 28
Fortress Monroe, Va.	Sept. 9	Sept. 10	Norfolk, Va.	Oct. 28	Nov. 3
Annapolis, Md.	Sept. 11	Sept. 15	Wilmington, N. C.	Nov. 4	Nov. 6
Fortress Monroe, Va.	Sept. 15	Sept. 17	Charleston, S. C.	Nov. 6	Nov. 19
Lambert's Point, Va.	Sept. 17	Sept. 18	Port Royal, S. C.	Nov. 19	Nov. 24
Norfolk, Va.	Sept. 18	Oct. 6	Savannah, Ga.	Nov. 24	Dec. 1
Provincetown, Mass.	Oct. 8	Oct. 9	St. Catherine's Island.	Dec. 1	Dec. 6
Boston, Mass.	Oct. 9	Oct. 22	Brunswick, Ga.	Dec. 5	Dec. 8
Provincetown, Mass.	Oct. 22	Oct. 23	Fernandina, Fla.	Dec. 8	Dec. 9
Newport, R. I.	Oct. 23	Oct. 24	Jacksonville, Fla.	Dec. 9	Dec. 18
New London, Conn.	Oct. 24	Oct. 25	St. Augustine, Fla.	Dec. 18	Dec. 28
Off Bridgeport, Conn.	Oct. 25	Oct. 26	Cape Canaveral, Florida.	Dec. 28	Dec. 29
New York, N. Y.	Oct. 26		Cape Florida, Florida.	Dec. 29	Dec. 30
	1898.	1898.	Miami, Florida.	Dec. 30	Dec. 31
New York, N. Y.		Apr. 9			1898.
Key West, Fla.	Apr. 16	Apr. 24	Key West, Fla.	Dec. 31	Jan. 27
Off Havana, Cuba.	Apr. 25	Apr. 25		1898.	
Off Bahia Honda, Cuba.	do	May 1	Tampa Bay, Fla.	Jan. 28	Jan. 28
Off Cape Catoche.	May 2	May 2	Port Tampa, Fla.	do	do
Off Bahia Honda, Cuba.	May 3	May 4	Mobile, Ala.	Jan. 29	Mar. 10
Key West, Fla.	May 6	May 12	Key West, Fla.	Mar. 11	Mar. 13
Off Havana, Cuba.	May 13	May 15	Dry Tortugas, Fla.	Mar. 13	Mar. 20
Off Havana, Cuba.	May 15	May 16	Key West, Fla.	Mar. 20	Apr. 22
Off Havana, Cuba.	May 17	May 23	Havana, Cuba.	Apr. 22	Apr. 23
Off Bahia Honda, Cuba.	May 24	May 24	Matanzas, Cuba.	Apr. 23	Apr. 27
Off Havana, Cuba.	May 25	May 25	Key West, Fla.	Apr. 27	Apr. 29
Off Parícut Grand Cay, Cuba.	May 26	May 26	Havana, Cuba.	Apr. 29	do
Off Havana, Cuba.	do	May 27	Matanzas, Cuba.	Apr. 30	May 7
Key West, Fla.	May 27	May 29	Key West, Fla.	May 7	May 16
Off Santiago de Cuba.	June 1	June 7	do	May 18	May 20
St. Nicholas Mole, Haiti.	June 8	June 9	Cienfuegos, Cuba.	May 22	May 24
Off Santiago de Cuba.	June 10	June 10	Havana, Cuba.	May 26	May 26
Guantanamo Bay, Cuba.	June 11	June 21	Key West, Fla.	do	May 28
Key West, Fla.	June 29	June 29	Mobile, Ala.	May 30	June 13
Norfolk, Va.	July 2	Aug. 10	Key West, Fla.	June 15	June 16
do.	Aug. 13	Aug. 17	Santiago de Cuba.	June 20	June 21
Hampton Roads, Virginia.	Aug. 17	Sept. 6	Guantanamo, Cuba.	June 21	June 22
Off Northeast End light ship.	Sept. 7	Sept. 7	Santiago de Cuba.	June 22	June 23
Delaware Breakwater, Del.	do	Sept. 9	Guantanamo, Cuba.	June 23	June 24
Winter Quarter (light ship)	Sept. 10	Sept. 10	Santiago de Cuba.	June 24	June 25
Hampton Roads, Virginia.	Sept. 11	Sept. 14	Guantanamo, Cuba.	June 26	June 26
Washington, D. C.	Sept. 15	Sept. 30	Santiago de Cuba.	do	June 27
			Guantanamo, Cuba.	June 27	do
Dorothea, Lieut. Commander W. J. BARNETT, commanding. Relieved by Lieut. J. J. KNAPP, Aug. 8, 1898. Relieved by Lieut. Commander N. T. HUSTON, Aug. 14, 1898.			Santiago de Cuba.	do	June 28
[Commissioned June 1, 1898. Out of commission Sept. 20, 1898.]			Guantanamo, Cuba.	June 28	June 29
	1898.	1898.	Santiago de Cuba.	June 29	June 30
Longue Island, Pa.		June 12	Guantanamo, Cuba.	June 30	July 1
Delaware Breakwater, Del.	June 14	June 16	Santiago de Cuba.	July 1	July 2
			Guantanamo, Cuba.	July 2	July 3
			Rio Tarquino, Cuba.	July 3	do
			Siboney, Cuba.	July 4	July 4
			Guantanamo, Cuba.	do	July 7
			Santiago de Cuba.	July 7	do
			Guantanamo, Cuba.	July 8	July 10

Movements of vessels—Continued.

Name of vessel and port visited	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Cushing, Lieut. ALBERT GLEAVES, commanding, etc.—Continued.	1897.	1897.	Detroit, Commander J. H. DAYTON, commanding—Continued.	1898.	1898.
Wilmington, N. C.	Nov. 4	Nov. 6	Mobile Bay, Alabama	Feb. 14	Feb. 15
Charleston, S. C.	Nov. 5	Nov. 19	Mobile, Ala.	Feb. 15	Feb. 23
Port Royal, S. C.	Nov. 19	Nov. 14	Sand Key anchorage, Florida	Feb. 25	Feb. 26
Savannah, Ga.	Nov. 24	Dec. 1	Key West, Fla.	Feb. 26	Feb. 28
St. Catherine's Inlet	Dec. 1	Dec. 5	Dry Tortugas, Fla.	Feb. 28	Mar. 1
Brunswick, Ga.	Dec. 5	Dec. 8	Key West, Fla.	Mar. 1	Mar. 16
Fernandina, Fla.	Dec. 8	Dec. 9	Dry Tortugas, Fla.	Mar. 18	Mar. 19
Jacksonville, Fla.	Dec. 9	Dec. 18	Sand Key anchorage	Mar. 16	Mar. 30
St. Augustine, Fla.	Dec. 18	Dec. 28	Key West, Fla.	Mar. 20	Apr. 4
Cape Canaveral.	Dec. 28	Dec. 29	Dry Tortugas, Fla.	Apr. 5	Apr. 6
Cape Florida	Dec. 29	Dec. 30	Key West, Fla.	Apr. 7	Apr. 8
Miami, Fla.	Dec. 30	Dec. 31	Do	Apr. 9	Apr. 12
			Do	Apr. 13	Apr. 18
			Do	Apr. 19	Apr. 21
			Do	Apr. 22	Apr. 23
Key West, Fla.	Dec. 31	Jan. 19	Off Havana, Cuba	do	Apr. 26
			Key West, Fla.	Apr. 27	Apr. 28
			Off Havana, Cuba	Apr. 29	May 1
Port Tampa, Fla.	Jan. 21	Jan. 22	Key West, Fla.	May 1	May 3
Key West, Fla.	Jan. 22	Feb. 1	Off Havana, Cuba	May 4	May 4
Dry Tortugas, Florida	Feb. 1	Do.	Off San Juan, Porto Rico	May 12	May 12
Key West, Fla.	do	Feb. 11	Key West, Fla.	May 19	May 23
Havana, Cuba	Feb. 11	Feb. 13	Do	June 1	June 9
Key West, Fla.	Feb. 13	Feb. 16	Do	June 12	June 14
Dry Tortugas, Florida	Feb. 16	Apr. 23	Off Balquidri, Cuba	June 22	June 24
Key West, Fla.	Apr. 23	Do.	Guantanamo Bay, Cuba	June 24	June 27
Off Havana, Cuba	Apr. 24	Apr. 24	Off Balquidri, Cuba	June 27	June 28
Key West, Fla.	May 2	May 3	Off Cienfuegos, Cuba	June 30	July 14
Off Sand Key, Fla.	do	May 3	Guantanamo Bay, Cuba	July 16	Aug. 12
Key West, Fla.	May 3	June 13	Cay Frances, Cuba	Aug. 14	Aug. 14
Rebecca Shoals	June 15	Do.	Between Isle of Pines and Cuba	do	Aug. 18
Key West, Fla.	June 16	June 16	Key West, Fla.	Aug. 18	Aug. 19
In Florida Straits	do	July 9	Hampton Roads, Virginia	Aug. 22	Aug. 29
Key West, Fla.	July 9	July 22	Provincetown, Mass.	Sept. 1	Sept. 1
Cardenas, Cuba	July 22	July 23	Boston, Mass.	Sept. 2	
Key West, Fla.	July 23	Aug. 4			
Cardenas, Cuba	Aug. 4	Aug. 5	Dixie, Commander C. H. DAVIS, commanding, Relieved by Lieut. G. A. MERRIAM.		
Sagua la Grande, Cuba	Aug. 6	Aug. 7	[Commissioned Apr. 19, 1898.]	1898.	1898.
Boca del Christo, Cuba	Aug. 7	Do.	Newport News, Va.	May 27	May 27
Sagua la Grande, Cuba	do	Aug. 9	Hampton Roads, Virginia	May 31	June 11
Piedras Cay, Cuba	Aug. 9	Aug. 11	Do	June 11	June 13
Hijo Cay, Cuba	Aug. 11	Do.	Lynn Haven Bay, Virginia	June 18	June 18
Piedras Cay, Cuba	do	Aug. 13	Mole St. Nicolas, Haiti	June 19	June 20
Cardenas Bay, Cuba	Aug. 13	Do.	Santiago de Cuba	June 20	June 20
Piedras Cay, Cuba	do	Aug. 14	Cape Cruz, Cuba	June 20	June 20
Key West, Fla.	Aug. 14	Aug. 16	Cienfuegos, Cuba	June 21	July 1
Cape Hatteras	Aug. 21	Aug. 22	Cape Cruz, Cuba	July 3	July 7
Hampton Roads, Virginia	Aug. 22	Aug. 23	Guantanamo, Cuba	July 8	July 21
New York, N. Y.	Aug. 24	Sept. 14	San Juan, Porto Rico	July 24	July 25
Newport, R. I.	Sept. 14		Guantanamo, Porto Rico	July 26	July 27
			Ponce, Porto Rico	July 27	July 28
Detroit, Commander J. H. DAYTON, commanding.	1897.	1897	St. Thomas, Danish West Indies	July 29	July 30
New York (navy yard)	May 21	Oct. 10	Ponce, Porto Rico	July 31	Aug. 1
Key West, Fla.	Oct. 16	Oct. 20	Guantanamo, Cuba	Aug. 3	Aug. 11
Puerto Cortes Honduras	Oct. 24	Oct. 25	Cape San Domingo	Aug. 13	Aug. 14
Livingston, Guatemala	Oct. 25	Nov. 2	Guantanamo, Cuba	Aug. 15	Aug. 24
Florida Bay	Nov. 5	Nov. 5	Hampton Roads, Virginia	Aug. 28	Sept. 10
Key West, Fla.	Nov. 6	Dec. 16	Baltimore, Md.	Sept. 11	Sept. 20
Port au Prince, Haiti	Dec. 20	Dec. 26	League Island (navy-yard)	Sept. 22	
Port Antonio, Jamaica	Dec. 27	Dec. 29			
			Dolphin, Commander H. W. LYON, commanding.		
San Domingo City, San Domingo	Dec. 31	Jan. 3	[Out of commission Nov. 24, 1897, recommissioned Mar. 24, 1898.]	1897.	1897.
			Boston, Mass.	June 27	July 9
San Pedro de Macoris, San Domingo	Jan. 3	Jan. 4	Washington, D. C.	July 12	July 24
Santa Barbara, San Domingo	Jan. 5	Jan. 7	Norfolk, Va.	July 25	July 26
Porto Plata, San Domingo	Jan. 8	Jan. 8	Hampton Roads, Virginia	do	July 28
Cape Haitien, Haiti	Jan. 9	Jan. 11			
Key West, Fla.	Jan. 14	Jan. 23			
Sand Key Light, Florida	Jan. 23	Jan. 24			
Dry Tortugas, Fla.	Jan. 25	Jan. 27			
Do	Jan. 29	Feb. 5			
Middle Rendezvous, Florida Bay	Feb. 6	Feb. 7			
Key West, Fla.	Feb. 8	Feb. 12			

Movements of vessels—Continued.

Name of vessel and port visited	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Dolphin, Commander H. W. Lusk, commanding—Cont'd.			Dorothea, Lieut. Commander W. J. BARNETT, commanding, etc. Continued		
1897.	1897.		1898.	1898.	
Annapolis, Md.	July 30	July 28	Hatteras Cove	June 17	June 18
Tompkinsville, N. Y.	July 29	Aug. 1	Port Royal, S. C.	June 20	June 28
New London, Conn.	Aug. 1	Aug. 3	Key West, Fla.	June 30	July 16
Newport, R. I.	Aug. 3	Aug. 6	Off Havana, Cuba	July 17	July 17
Cottage City, Mass.	Aug. 6	Aug. 7	Key West, Fla.	do	Aug. 21
Boston, Mass.	Aug. 7	Aug. 12	Port Royal, S. C.	Aug. 24	Aug. 30
Portland, Me.	Aug. 12	Aug. 14	Hampton Roads, Virginia....	Aug. 29	
Berkland, Me.	Aug. 14	Aug. 17			
Isle au Haut, Me.	Aug. 17	Do.	De Pont, Lieut. SPENCER S. Wood, commanding		
Kimball's Island, Me.	do	Aug. 18	[Commissioned Sept. 23, 1898.]		
Isle au Haut, Me.	Aug. 18	Aug. 20	1897.	1897.	
Bar Harbor, Me.	Aug. 20	Aug. 23	Newport, R. I.	Aug. 28	Sept. 26
Seal Harbor, Me.	Aug. 23	Do.	New York (navy-yard) ..	Sept. 26	Oct. 7
do	do	Aug. 24	Hampton Roads, Virginia ..	Oct. 7	Oct. 8
Bar Harbor, Me.	Aug. 24	Aug. 26	do	Oct. 9	Oct. 13
do	Aug. 26	Aug. 29	Annapolis, Md.	Oct. 13	Oct. 15
Belfast, Me.	Aug. 29	Aug. 30	Hampton Roads, Virginia....	Oct. 15	Oct. 18
Berkland, Me.	Aug. 30	Do.	Norfolk, Va.	Oct. 16	Oct. 22
Portland, Me.	do	Sept. 3	Hampton Roads, Virginia ..	Oct. 22	Oct. 23
Fortress Monroe, Va.	Sept. 4	Sept. 7	City Point, Va.	Oct. 23	Oct. 24
Cruising Ground	Sept. 7	Sept. 9	Richmond, Va.	Oct. 24	Oct. 27
Fortress Monroe, Va.	Sept. 9	Sept. 10	Newport News, Va.	Oct. 27	Oct. 28
Annapolis, Md.	Sept. 11	Sept. 15	Norfolk, Va.	Oct. 28	Nov. 3
Fortress Monroe, Va.	Sept. 15	Sept. 17	Wilmington, N. C.	Nov. 4	Nov. 6
Lamberts Point, Va.	Sept. 17	Sept. 18	Charleston, S. C.	Nov. 6	Nov. 19
Norfolk, Va.	Sept. 18	Oct. 6	Port Royal, S. C.	Nov. 19	Nov. 24
Provincetown, Mass.	Oct. 8	Oct. 9	Savannah, Ga.	Nov. 24	Dec. 1
Boston, Mass.	Oct. 9	Oct. 22	St. Catherine's Island.	Dec. 1	Dec. 5
Provincetown, Mass.	Oct. 22	Oct. 23	Brunswick, Ga.	Dec. 5	Dec. 6
Newport, R. I.	Oct. 23	Oct. 24	Fernandina, Fla.	Dec. 8	Dec. 9
New London, Conn.	Oct. 24	Oct. 25	Jacksonville, Fla.	Dec. 9	Dec. 18
Off Bridgeport, Conn.	Oct. 25	Oct. 26	St. Augustine, Fla.	Dec. 18	Dec. 28
New York, N. Y.	Oct. 26		Cape Canaveral, Florida	Dec. 28	Dec. 29
1898.	1898.		Cape Florida, Florida	Dec. 29	Dec. 30
New York, N. Y.	Apr. 9	Apr. 9	Miami, Florida	Dec. 30	Dec. 31
Key West, Fla.	Apr. 16	Apr. 24			
Off Havana, Cuba.	Apr. 25	Apr. 25	1898.	1898.	
Off Bahia Honda, Cuba	do	May 1	Key West, Fla.	Dec. 31	Jan. 27
Off Cape Catoche.	May 2	May 2			
Off Bahia Honda, Cuba	May 3	May 4	1898.	1898.	
Key West, Fla.	May 6	May 12	Tampa Bay, Fla.	Jan. 28	Jan. 29
Off Havana, Cuba.	May 13	May 15	Port Tampa, Fla.	do	do
Key West, Fla.	May 15	May 16	Mobile, Ala.	Jan. 29	Mar. 10
Off Havana, Cuba.	May 17	May 23	Key West, Fla.	Mar. 11	Mar. 13
Off Bahia Honda, Cuba	May 24	May 24	Dry Tortugas, Fla.	Mar. 13	Mar. 20
Off Havana, Cuba.	May 25	May 25	Key West, Fla.	Mar. 20	Apr. 22
Off Paredon Grande Cay, Cuba	May 26	May 26	Havana, Cuba.	Apr. 22	Apr. 23
Off Havana, Cuba.	do	May 27	Matanzas, Cuba.	Apr. 23	Apr. 27
Key West, Fla.	May 27	May 29	Key West, Fla.	Apr. 27	Apr. 29
Off Santiago de Cuba.	June 1	June 7	Havana, Cuba.	Apr. 29	do
St. Nicholas Mole, Haiti	June 8	June 9	Matanzas, Cuba.	Apr. 30	May 7
Off Santiago de Cuba.	June 10	June 16	Key West, Fla.	May 7	May 10
Guantanamo Bay, Cuba.	June 11	June 21	do	May 18	May 20
Key West, Fla.	June 28	June 29	Cienfuegos, Cuba.	May 22	May 24
Berfolk, Va.	July 2	Aug. 10	Havana, Cuba.	May 26	May 26
do	Aug. 13	Aug. 17	Key West, Fla.	do	May 28
Hampton Roads, Virginia....	Aug. 17	Sept. 6	Mobile, Ala.	Mar. 30	June 13
Off Northeast End light-ship.	Sept. 7	Sept. 7	Key West, Fla.	June 15	June 19
Delaware Breakwater, Del.	do	Sept. 9	Santiago de Cuba.	June 20	June 21
Winter Quarter Shoal light-ship	Sept. 10	Sept. 10	Guantanamo, Cuba.	June 21	June 22
Hampton Roads, Virginia....	Sept. 11	Sept. 14	Santiago de Cuba.	June 22	June 23
Washington, D. C.	Sept. 15	Sept. 30	Guantanamo, Cuba.	June 23	June 24
			Santiago de Cuba.	June 24	June 25
			Guantanamo, Cuba.	June 26	June 26
			Santiago de Cuba.	do	June 27
Dorothea, Lieut. Commander W. J. BARNETT, commanding. Relieved by Lieut. J. J. KNAPP, Aug. 8, 1898. Relieved by Lieut. Commander K. T. HENRY, Aug. 14, 1898.			Guantanamo, Cuba.	June 27	do
[Commissioned June 1, 1898. Out of commission Sept. 20, 1898.]			Santiago de Cuba.	do	June 28
1898.	1898.		Guantanamo, Cuba.	June 28	June 29
League Island, Pa.	June 13	June 16	Santiago de Cuba.	June 29	June 30
Delaware Breakwater, Del.	June 14	June 16	Guantanamo, Cuba.	June 30	July 1
			Santiago de Cuba.	July 1	July 2
			Guantanamo, Cuba.	July 2	July 3
			Rio Tarquino, Cuba.	July 3	do
			Siboney, Cuba.	July 4	July 4
			Guantanamo, Cuba.	do	July 7
			Santiago de Cuba.	July 7	do
			Guantanamo, Cuba.	July 8	July 16

Movements of vessels—Continued.

Name of vessel and port visited	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
De Pont, Lieut. SPENCER S. Wood, commanding—Cont'd.			Elfrida, Lieut. (J. G.) M. A. ORLOFF, commanding, etc.—Continued.		
	1898.	1898.		1898.	1898.
Santiago de Cuba.....	July 16	July 18	Fort Pond Bay, Long Island, New York.....	Sept. 3	Sept. 6
Guantanamo, Cuba.....	July 17	July 18	New London, Conn.....	Sept. 6	Sept. 7
Santiago de Cuba.....	July 18	Do.	Fort Pond Bay, Long Island, New York.....	Sept. 7	Do.
Guantanamo, Cuba.....	do.	July 21	New London, Conn.....	do.	Sept. 8
Port Nipe, Cuba.....	July 21	Do.	Fort Pond Bay, Long Island, New York.....	Sept. 8	Sept. 9
Guantanamo, Cuba.....	July 22	July 24	New York, N. Y.....	Sept. 10	
Do.....	July 24	Do.			
Cienfuegos, Cuba.....	July 25	July 26	Ericsson, Lieut. N. R. Usher, commanding.		
Guantanamo, Cuba.....	July 27	Aug. 3	[Out of commission Sept. 21, 1898.]		
Brunswick, Ga.....	Aug. 6	Aug. 6		1897.	1897.
New York, N. Y.....	Aug. 9			July 7	July 7
Eagle, Lieut. W. H. H. SOUTHERLAND, commanding—Relieved by Ensign P. SYMINGTON, Sept. 29, 1898.			Narragansett Bay.....	do.	July 8
[Commissioned Apr. 5, 1898.]	1898.	1898.	Newport, R. I.....	July 8	July 9
New York, N. Y.....	Apr. 17	Apr. 17	Cottage City, Mass.....	July 9	July 12
Sandy Hook, N. Y.....	Apr. 23	Apr. 24	Boston, Mass.....	July 12	July 13
Key West, Fla.....	May 3	May 5	Massachusetts and Hingham bays and Boston.....	July 13	July 14
Do.....	May 10	May 21	Do.....	July 14	July 15
Do.....	May 31	June 3	Do.....	July 15	July 16
Do.....	June 8	June 10	Do.....	July 16	July 17
Do.....	June 12	June 14	Boston, Mass.....	July 17	July 18
Off Santiago de Cuba.....	June 23	June 23	Newport, R. I.....	July 17	July 18
Port Guantanamo, Cuba.....	do.	June 26	Tompkinsville, N. Y.....	July 18	July 19
Isle of Pines, Cuba.....	June 30	July 1	Navy yard, New York.....	July 19	July 22
Key West, Fla.....	July 7	July 10	Communipaw, N. J.....	July 23	Do.
Do.....	July 20	July 23	New London, Conn.....	do.	July 25
Do.....	Aug. 3	Aug. 7	Fischers Island Sound, Gardiners Bay, and New London, Conn.....	July 25	July 26
Do.....	Aug. 18	Aug. 18	Fischers Island Sound and New London, Conn.....	July 26	July 27
Hampton Roads, Virginia.....	Aug. 22	Sept. 21	Do.....	July 27	July 28
Norfolk, Va.....	Sept. 21	Oct. 3	Stonington, Conn.....	July 28	July 29
Hampton Roads, Virginia.....	Oct. 3		Newport, R. I.....	July 29	July 30
Elfrida, Lieut. (J. G.) M. A. ORLOFF, commanding—Relieved by Lieut. (J. G.) W. H. STAYTON, July 29, 1898. Relieved by Lieut. (J. G.) M. A. ORLOFF, Aug. 2, 1898. Relieved by Lieut. T. C. ZERROA, Aug. 29, 1898.			Narragansett Bay and Newport, R. I.....	July 30	Aug. 4
[Commissioned June 30, 1898. Out of commission Sept. 14, 1898.]	1898.	1898.	Newport, R. I.....	Aug. 4	Aug. 6
New York, N. Y.....	Aug. 1	Aug. 1	Coddington Cove and Newport, R. I.....	Aug. 6	Aug. 7
New London, Conn.....	Aug. 1	Aug. 2	Newport, R. I.....	Aug. 7	Aug. 11
Niantic Bay, Connecticut.....	Aug. 2	Do.	Narragansett Bay and Newport, R. I.....	Aug. 11	Aug. 17
New London, Conn.....	do.	Aug. 3	Newport, R. I.....	Aug. 17	Aug. 23
Fishers Island, New York.....	Aug. 3	Aug. 4	Noyack Bay and Sag Harbor, New York, R. I.....	Aug. 23	Aug. 24
New London, Conn.....	Aug. 4	Aug. 5	Do.....	Aug. 24	Sept. 4
New York, N. Y.....	Aug. 5	Aug. 6	Do.....	Sept. 6	Sept. 11
Tompkinsville, N. Y.....	Aug. 6	Do.	Do.....	Sept. 11	Sept. 12
Greenport, N. J.....	Aug. 7	Aug. 7	Do.....	Sept. 16	Sept. 16
Hinnecock Canal, New Jersey.....	do.	Aug. 8	New Haven, Conn.....	Sept. 19	Sept. 19
Greenport, N. J.....	Aug. 8	Do.	Navy yard, New York.....	do.	Oct. 1
New York, N. Y.....	Aug. 9	Aug. 23	Tompkinsville, N. Y.....	Oct. 1	Oct. 2
Fort Pond Bay, Long Island, New York.....	Aug. 24	Aug. 25	Delaware Breakwater, Del.....	Oct. 3	Oct. 5
Greenport, N. J.....	Aug. 25	Aug. 26	Do.....	Oct. 5	Oct. 6
Fort Pond Bay, Long Island, New York.....	Aug. 26	Aug. 27	Assateague anchorage.....	Oct. 6	Oct. 7
New London, Conn.....	Aug. 27	Do.	Hampton Roads, Virginia.....	Oct. 7	Oct. 8
Fort Pond Bay, Long Island, New York.....	do.	Aug. 29	Norfolk, Va.....	Oct. 8	Oct. 9
New London, Conn.....	Aug. 29	Aug. 30	Hampton Roads, Virginia.....	Oct. 9	Oct. 11
Fort Pond Bay, Long Island, New York.....	Aug. 30	Sept. 1	Do.....	Oct. 11	Oct. 12
Greenport, N. J.....	Sept. 1	Sept. 2	Do.....	Oct. 12	Oct. 13
Fort Pond Bay, Long Island, New York.....	Sept. 2	Do.	Annapolis, Md.....	Oct. 13	Oct. 14
New London, Conn.....	do.	Sept. 3	Do.....	Oct. 14	Oct. 15
			Hampton Roads, Virginia.....	Oct. 15	Do.
			Navy yard, Norfolk, Va.....	do.	Oct. 22
			Hampton Roads, Virginia.....	Oct. 22	Oct. 23
			City Point, Va.....	Oct. 23	Oct. 24
			Richmond, Va.....	Oct. 24	Oct. 27
			Newport News, Va.....	Oct. 27	Oct. 28
			Norfolk, Va.....	Oct. 28	Nov. 3
			Wilmington, N. C.....	Nov. 4	Nov. 4
			Charleston, S. C.....	Nov. 6	Nov. 11
			Do.....	Nov. 11	Nov. 15
			Do.....	Nov. 16	Nov. 19
			Port Royal, S. C.....	Nov. 19	Nov. 27

Movements of console—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Ericsson, Lieut. N. R. Tamm, commanding—Continued.	1897.	1897.	Ericsson, Lieut. N. R. Tamm, commanding—Continued.	1898.	1898.
Port Royal, S. C.	Nov. 27	Nov. 28	Off Santiago de Cuba.....	June 21	June 22
Savannah, Ga.	Nov. 28	Dec. 1	Do	June 22	Do.
St. Catherine's Island, Georgia	Dec. 1	Dec. 5	Baiquiri, Cuba	do	Do.
Brunswick, Ga.	Dec. 5	Dec. 8	Guantanamo, Cuba.....	do	June 23
Fernandina, Fla.	Dec. 8	Dec. 9	Off Santiago de Cuba.....	June 23	June 24
Jacksonville, Fla.	Dec. 9	Dec. 15	Do	June 24	Do.
St. Augustine, Fla.	Dec. 15	Dec. 18	Guantanamo, Cuba.....	do	June 25
Do	Dec. 18	Dec. 28	Off Santiago de Cuba.....	June 25	June 26
Cape Canaveral, Florida.....	Dec. 28	Dec. 30	Do	June 26	Do.
Cape Florida, Florida.....	Dec. 29	Dec. 30	Baiquiri, Cuba	do	Do.
Miami, Fla.	Dec. 30	Dec. 31	Off Santiago de Cuba.....	do	June 27
			Do	June 27	Do.
Key West, Fla.	Dec. 31	Jan. 7	Guantanamo, Cuba.....	do	June 28
	1898.	1898.	Off Santiago de Cuba.....	June 28	June 29
Key West, Fla.	Jan. 7	Jan. 8	Do	June 29	Do.
Do	Jan. 8	Jan. 19	Guantanamo Bay.....	do	June 30
Port Tampa, Fla.	Jan. 20	Jan. 25	Off Santiago de Cuba.....	June 30	Do.
Mobile Bay, Florida.....	Jan. 25	Jan. 26	Siboney, Cuba.....	do	Do.
Mobile, Ala.	Jan. 26	Feb. 3	Off Santiago de Cuba.....	do	July 1
Key West, Fla.	Feb. 5	Feb. 16	Do	July 1	Do.
Dry Tortugas, Fla.	Feb. 16	Do.	Do	do	Do.
Sand Key and Key West, Fla.	do	Feb. 18	Guantanamo, Cuba.....	do	July 4
Dry Tortugas, Fla.	Feb. 18	Do.	Siboney, Cuba.....	July 6	Do.
Key West, Fla.	do	Feb. 19	Do	do	Do.
Do	Feb. 19	Feb. 21	Guantanamo, Cuba.....	July 7	July 8
Dry Tortugas, Fla.	Feb. 21	Do.	Off Santiago de Cuba.....	July 8	Do.
Key West, Fla.	do	Feb. 25	Guantanamo, Cuba.....	do	July 19
Do	Feb. 25	Feb. 26	Santiago de Cuba.....	July 19	Do.
Do	Feb. 26	Feb. 27	Guantanamo, Cuba.....	do	Aug. 10
Dry Tortugas, Fla.	Feb. 27	Do.	Key West, Fla.	Aug. 13	Aug. 14
Key West, Fla.	do	Mar. 2	Charleston, S. C.	Aug. 17	Aug. 18
Do	Mar. 2	Mar. 3	Hampton Roads, Virginia.....	Aug. 20	Aug. 23
Do	Mar. 3	Mar. 25	Navy-yard, New York.....	Aug. 23	
Do	Mar. 25	Mar. 26			
Do	Mar. 26	Mar. 27			
Do	Mar. 27	Mar. 29			
Do	Mar. 29	Mar. 31			
Do	Mar. 31	Apr. 3			
Do	Apr. 3	Do.			
Do	Apr. 4	Apr. 6			
Do	Apr. 6	Do.			
Do	Apr. 7	Apr. 10			
Do	Apr. 10	Apr. 18			
Do	Apr. 18	Do.			
Do	Apr. 19	Apr. 22			
Havana Blockade.....	Apr. 22				
Do		Apr. 23			
Key West, Fla.	Apr. 23	Apr. 28			
Blockade off Havana.....	Apr. 23				
Do		Apr. 29			
Off Mariel, Cuba.....	Apr. 29	Do.			
Off Cabañas, Cuba.....	do	Do.			
Blockade off Havana.....	Apr. 30	Apr. 30			
Do	do	May 1			
Do	May 1	May 2			
Do	May 2	Do.			
Blockade off Havana.....	do	May 3			
Do	May 3	Do.			
Key West, Fla.	do	May 8			
Do	May 8	May 9			
Do	May 9	May 10			
Do	May 10	May 11			
Blockade off Havana.....	May 12	May 12			
Do	do	Do.			
Do	do	Do.			
Do	do	May 13			
Key West, Fla.	May 14	June 10			
Blockade off Havana.....	June 10	June 11			
Do	June 11	Do.			
Off Mariel, Cuba.....	do	Do.			
Off Cabañas, Cuba.....	do	Do.			
Key West, Fla.	June 12	June 15			
Off Dry Tortugas, Fla.	June 15	Do.			
Do	do	Do.			
Santiago de Cuba.....	June 20	June 20			
Guantanamo Bay.....	do	June 21			

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Fern, Lieut. Commander Wm. S. COWLES, commanding, etc.—Continued			Fern, Lieut. Commander Wm. S. COWLES, commanding, etc.—Continued.		
	1897.	1897.		1898.	1898.
Navy-yard, New York	July 9	July 26	Key West, Fla	Apr. 16	Apr. 27
Fort Mifflin, Pa	July 28	July 28	Port Tampa, Fla	Apr. 23	Apr. 28
Newport, R. I.	July 30	Aug. 7	Key West, Fla	Apr. 29	June 27
Bridgeport, Conn.	Aug. 7	Aug. 10	Santiago de Cuba	July 3	July 6
Navy yard, New York	Aug. 10	Aug. 19	Guantanamo, Cuba	July 4	July 8
Portland, Me.	Aug. 18	Aug. 23	Key West, Fla	July 9	July 17
Bar Harbor, Me.	Aug. 24	Aug. 29	Santiago de Cuba	July 23	July 28
New York, N. Y.	Aug. 31	Sept. 5	Key West, Fla	Aug. 5	Aug. 13
Southern Drill Ground	Sept. 4	Sept. 8	Guantanamo, Cuba	Aug. 20	Aug. 24
Newport News, Va.	Sept. 8	Sept. 9	Hampton Roads, Virginia	Sept. 1	Sept. 19
Annapolis, Md	Sept. 9	Sept. 11	Norfolk, Va. (navy-yard)	Sept. 10	
Chesapeake Bay (torpedo course)	Sept. 11	Do.	Fish Hawk, Lieut. Commander FRANCIS H. DELANO, commanding.		
Annapolis, Md	do.	Sept. 12	[Transferred to Navy May 4, 1898. Returned to Fish Commission Sept. 15, 1898.]		
Hampton Roads, Virginia	Sept. 13	Sept. 14		1898.	1898.
Norfolk, Va.	Sept. 14	Sept. 15	League Island, Pa	May 14	July 13
Hampton Roads, Virginia	Sept. 15	Sept. 20	Charleston, S. C.	July 20	July 21
Norfolk, Va.	Sept. 20	Sept. 21	Key West, Fla.	July 24	Aug. 1
Newport News, Va.	Sept. 21	Sept. 22	Off Havana, Cuba	Aug. 3	Aug. 12
Norfolk, Va.	Sept. 22	Sept. 23	Key West, Fla.	Aug. 14	Aug. 17
Hampton Roads, Virginia	Sept. 23	Sept. 24	Turtle Harbor, Florida	Aug. 18	Aug. 19
Norfolk, Va.	Sept. 24	Do.	League Island, Pa	Aug. 24	
Hampton Roads, Virginia	do.	Sept. 25			
Yorktown, Va.	Sept. 25	Do.	Frolic, Commander E. H. GREEN, commanding.		
Hampton Roads, Virginia	do.	Sept. 26	[Commissioned July 6, 1898. Out of commission Sept. 27, 1898.]		
Tompkinsville, Long Island	Sept. 27	Sept. 28		1898.	1898.
Navy yard, New York	Sept. 28	Sept. 29	Portsmouth, N. H.	July 31	July 23
Yorktown, Va.	Sept. 30	Oct. 2	Key West, Fla.	July 31	Aug. 1
Navy yard, Norfolk, Va.	Oct. 2	Oct. 5	Guantanamo, Cuba	Aug. 5	Aug. 7
Southern Drill Grounds	Oct. 5	Oct. 7	Ponce, Porto Rico	Aug. 11	Aug. 13
Navy yard Norfolk, Va.	Oct. 7	Oct. 8	Arroyo, Porto Rico	Aug. 12	Do.
Southern Drill Grounds	Oct. 8	Oct. 9	Cape San Juan, Porto Rico	Aug. 14	Aug. 14
Lamberts Point, Va.	Oct. 9	Oct. 11	San Juan, Porto Rico	do.	Aug. 16
Provincetown, Mass	Oct. 14	Oct. 14	Key West, Fla.	Aug. 20	Aug. 20
Boston, Mass	do.	Oct. 22	Fort Monroe, Va.	Aug. 24	Sept. 3
Provincetown, Mass	Oct. 22	Oct. 23	Norfolk (navy-yard)	Sept. 17	
Navy yard, New York	Oct. 24	Dec. 18	Glacier, Commander J. P. MERRILL, commanding.		
Wreck off Frying Pan Shoals	Dec. 21	Dec. 21	[Commissioned July 5, 1898.]		
Hampton Roads, Virginia	Dec. 23	Dec. 23		1898.	1898.
Lamberts Point, Virginia	do.	Do.	New York, N. Y.	July 23	July 29
Hampton Roads, Virginia	do.	Dec. 25	Hampton Roads, Virginia	Aug. 21	Aug. 15
Navy-yard, Norfolk	Dec. 25	Dec. 27	Guantanamo Bay, Cuba	Sept. 8	Sept. 1
Hampton Roads, Virginia	Dec. 27	Dec. 29	Mole St. Nicolas, Haiti	Sept. 10	Sept. 10
Navy-yard, Norfolk	Dec. 29	Do.	Guantanamo Bay, Cuba	Sept. 15	Sept. 14
Hampton Roads, Virginia	do.	Dec. 31	Cabanas, Cuba	do.	Sept. 15
			Rio Tarquino, Cuba	do.	Do.
			Cabanas, Cuba	do.	Do.
			Guantanamo Bay, Cuba	do.	
Navy-yard, Norfolk			Gloucester, Lieut. Commander RICHARD WAINWRIGHT, commanding.		
	Dec. 31	Jan. 8	[Commissioned May 16, 1898.]		
	1898.			1898.	1898.
Hampton Roads, Virginia	Jan. 3	Jan. 6	New York, N. Y.	June 3	June 4
Navy-yard, Norfolk	Jan. 6	Jan. 11	Key West, Fla.	June 6	June 6
Hampton Roads, Virginia	Jan. 11	Jan. 13	Off Banea, Cuba	June 8	June 8
Navy yard, Norfolk	Jan. 13	Jan. 18	Off Santiago de Cuba	do.	Do.
Hampton Roads, Virginia	Jan. 16	Do.	Asseradero, Cuba	June 9	June 14
Navy yard, Norfolk	do.	Jan. 17	Off Santiago de Cuba	June 14	Do.
Hampton Roads, Virginia	Jan. 17	Do.	Guantanamo Bay, Cuba	June 15	June 15
Key West, Fla.	Jan. 22	Jan. 22	St. Nicolas Mole, Haiti	June 16	June 16
Dry Tortugas, Florida	Jan. 23	Jan. 26	Off Santiago de Cuba	do.	June 18
Key West, Fla.	Jan. 27	Jan. 27	St. Nicolas Mole, Haiti	June 18	June 18
Dry Tortugas, Florida	Jan. 28	Jan. 31	Off Santiago de Cuba	June 19	June 19
Key West, Fla.	Feb. 1	Feb. 2	Asseradero, Cuba	June 20	June 1
Dry Tortugas, Florida	Feb. 3	Feb. 4	La Sigua, Cuba	June 21	Do.
Key West, Fla.	Feb. 5	Feb. 7	Aguaadores, Cuba	June 22	June 22
Dry Tortugas, Florida	Feb. 8	Feb. 8			
Key West, Fla.	Feb. 9	Feb. 9			
Dry Tortugas, Florida	Feb. 10	Feb. 10			
Key West, Fla.	do.	Feb. 14			
Dry Tortugas, Florida	Feb. 15	Feb. 15			
Key West, Fla.	Feb. 16	Feb. 16			
Havana, Cuba	do.	Mar. 9			
Key West, Fla.	Mar. 10	Mar. 11			
Matanzas, Cuba	Mar. 12	Mar. 12			
Sagua la Grande, Cuba	Mar. 13	Mar. 13			
Key West, Fla.	Mar. 14	Mar. 16			
Havana, Cuba	Mar. 17	Apr. 9			
Key West, Fla.	Apr. 10	Apr. 13			
Port Tampa, Fla	Apr. 14	Apr. 15			

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Glover, Lieut. Com- mander RICHARD WAIN- WRIGHT, commanding— Continued.			Hannibal, Commander H. G. O. COLBY, commanding— Continued.		
Off Santiago de Cuba.....	1898. June 27	1898. June 30	Hampton Roads, Virginia ..	1898. July 19	1898. July 31
Guantanamo, Cuba.....	June 30	Do.	Guantanamo, Cuba	July 30	July 30
Off Santiago de Cuba.....	do.	July 3	Ponce, Porto Rico.....	Aug. 2	July 4
Siboney, Cuba	July 3	Do.	Guanica, Porto Rico	Aug. 5	July 7
Aguadorea, Cuba	do.	July 8	Ponce, Porto Rico.....	July 8	July 8
Guantanamo Bay, Cuba.....	July 8	July 10	San Juan, Porto Rico.....	July 9	Aug. 14
Wreck Spanish vessel.....	July 10	Do.	Ponce, Porto Rico.....	July 13	Aug. 19
Guantanamo Bay, Cuba.....	do.	July 11	Guanica, Porto Rico	Aug. 19	Aug. 31
Aguadorea, Cuba	July 11	July 12	St. Nicolas Mole, Haiti	Sept. 3	Sept. 5
Baquira, Cuba	July 12	July 13	Charleston, S. C.	Sept. 10	Sept. 18
Dispatch duty, between Har- guira and Guantanamo.	July 13	July 19	Hampton Roads, Virginia ..	Sept. 21	
Guantanamo Bay, Cuba.....	July 19	July 21	Harvard, Capt. C. S. COTTON, commanding.		
Guanica, Porto Rico	July 25	July 27	[Commissioned Apr. 26, 1898; out of commission Sept. 2, 1898.]		
Ponce, Porto Rico.....	July 27	Aug. 1		1898.	1898.
Arroyo, Porto Rico.....	Aug. 1	Aug. 15	New York, N. Y.		Apr. 30
Ponce, Porto Rico.....	Aug. 15	Aug. 16	St. Pierre, Martinique	May 11	May 17
St. Thomas, Danish West Indies	Aug. 16	Aug. 21	Off Santiago de Cuba	May 23	May 24
Ponce, Porto Rico.....	Aug. 21	Do.	St. Nicolas Mole, Haiti	May 25	May 26
Guanica, Porto Rico.....	do.	Aug. 22	Off Santiago de Cuba	May 27	May 27
Guantanamo Bay, Cuba.....	Aug. 24	Aug. 29	Kingston, Jamaica.	May 28	May 30
Tompkinsville, N. Y.	Sept. 4	Sept. 10	Off Santiago de Cuba.....	May 31	June 1
Boston, Mass.	Sept. 12	Sept. 15	St. Nicolas Mole, Haiti	June 2	June 2
Glover, Lieut. Com- mander RICHARD WAIN- WRIGHT, commanding.	Sept. 15	Sept. 18	Hampton Roads, Virginia ..	June 7	June 8
Boston, Mass.	Sept. 18	Sept. 21	Newport News, Va.	June 8	June 26
Provincetown, Mass.	Sept. 25	Sept. 26	Santiago de Cuba	July 1	July 1
Tompkinsville, N. Y.	Sept. 27	Sept. 29	Siboney, Cuba	do.	July 8
New York (navy-yard).....	Sept. 29		Guantanamo, Cuba	July 8	July 10
Governor Russell, Lieut. C. H. LAMONT, commanding.			Portsmouth, N. H.	July 15	July 18
[Commissioned June 21, 1898; out of commission Sept. 24, 1898.]			Annapolis, Md.	July 20	July 21
	1898.	1898.	Off Sandy Hook, N. Y.	July 22	July 23
New York, N. Y.	July 17	July 23	New York, N. Y.	July 23	Aug. 14
Banfort, N. C.	July 27	Aug. 5	Off Santiago de Cuba	Aug. 19	Aug. 21
Port Royal, S. C.	Aug. 7	Sept. 7	Montauk, Long Island, N. Y.	Aug. 25	Aug. 26
Hampton Roads, Virginia ..	Sept. 10	Sept. 13	New York, N. Y.	Aug. 27	
Navy yard, Norfolk, Va.	Sept. 13		Hawk, Lieut. J. HOOD, com- manding.		
Quin, Lieut. C. S. WILLIAMS, commanding.			[Commissioned Apr. 5, 1898; out of commission Sept. 14, 1898.]		
[Commissioned April 6, 1898.]				1898.	1898.
	1898.	1898.	New York, N. Y.		Apr. 18
Newport, R. I.	Apr. 4	June 24	Key West, Fla.	Apr. 23	Apr. 24
New York, N. Y.	June 24	June 25	Off Havana, Cuba.....	Apr. 25	Apr. 26
Annapolis, Md.	June 27	June 28	Off Cape San Antonio, Cuba	Apr. 27	May 1
Norfolk, Va.	June 28	June 29	Key West, Fla.	May 2	May 9
Southport, N. C.	July 1	July 2	Off Havana, Cuba.....	May 10	May 15
Charleston, S. C.	July 2	July 4	Matanzas and Cardenas, Cuba.	May 15	do.
Port Royal, S. C.	July 4	July 5	Off Havana, Cuba.....	do.	May 18
Fernandina, Fla.	July 5	July 6	Key West, Fla.	May 17	May 19
Key West, Fla.	July 6	Aug. 5	Off Havana, Cuba.....	May 19	May 21
Sagua la Grande, Cuba.....	Aug. 6	Aug. 6	Cienfuegos, Cuba.....	May 23	May 21
Francis Cay, Cuba.....	Aug. 7	Aug. 8	Off Havana, Cuba.....	May 25	May 26
Sagua la Grande, Cuba.....	Aug. 8	Aug. 9	Key West, Fla.	May 26	May 31
Cardenas, Cuba	Aug. 9	Aug. 14	Nicholas Channel	May 31	June 2
Key West, Fla.	Aug. 14	Aug. 17	Key West, Fla.	June 2	June 6
Miami, Fla.	Aug. 19	Aug. 21	Off Havana, Cuba.....	June 6	June 8
Fernandina, Fla.	Aug. 22	Aug. 23	Key West, Fla.	June 14	June 13
Charleston, S. C.	Aug. 23	Aug. 25	Off Havana, Cuba.....	June 18	June 18
Southport, N. C.	Aug. 25	Aug. 27	Key West, Fla.	June 24	June 23
Hampton Roads, Virginia ..	Aug. 29	Aug. 30	Off Havana, Cuba.....	June 26	July 23
Norfolk, Va.	Aug. 30	Aug. 31	Key West, Fla.	July 9	July 16
Annapolis, Md.	Aug. 31	Sept.	Santiago de Cuba	July 19	July 19
Philadelphia, Pa.	Sept.	Sept. 2	Guantanamo, Cuba	do.	July 20
New York, N. Y.	Sept. 3		Key West, Fla.	July 23	July 24
Hannibal, Commander H. G. O. COLBY, commanding.			Off Havana, Cuba	July 26	July 29
[Commissioned June 7, 1898.]			Off Cardenas, Cuba	do.	do.
	1898.	1898.	Off Sagua la Grande, Cuba	July 30	Aug. 3
New York, N. Y.		June 18	Off Cay Frances, Cuba	Aug. 3	do.
Key West, Fla.	June 28	July 13	Off Sagua la Grande, Cuba	Aug. 4	Aug. 5
Lambert Point, Virginia.....	July 17	July 19	Off Cay Frances, Cuba	Aug. 5	do.
			Off Sagua la Grande, Cuba	Aug. 6	Aug. 8
			Key West, Fla.	Aug. 9	Aug. 17
			Hampton Roads, Virginia ..	Aug. 21	Sept. 9
			Norfolk, Va.	Sept. 9	

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Maline, Capt. CHAS. D. SWANCK, commanding—Continued.	1897.	1897.	Mangrove, Lieut. Commander W. H. EVERETT, commanding, etc.—Continued.	1898.	1898.
Delaware Breakwater, Del.	July 8	July 9	Key West, Fla.	July 4	July 13
Northern Drill Ground.	July 9	July 10	Blockade, north coast of Cuba	July 14	Aug. 1
Sandy Hook, New Jersey.	July 10	July 11	Key West, Fla.	Aug. 2	Aug. 10
Tompkinsville, N. Y.	July 11	July 16	Cay Piedras, Cuba.		
New London, Conn.	July 17	July 19			
Fishers Island, New York.	July 19	July 23			
Montank Point, New York.	July 23	Do.	Marblehead, Commander H. H. McCalla, commanding	1897.	1897.
Fishers Island, New York.	do	Do.	Boston, Mass.		July 15
New London, Conn.	do	July 26	Charlottetown, Prince Edward Island.	July 19	July 26
Off Fishers Island, New York.	July 26	July 28	Georgetown, Prince Edward Island.	July 27	July 29
Montank Point, New York.	July 28	Do.	Charlottetown, Prince Edward Island.	July 29	Aug. 7
Fishers Island, New York.	do	Do.	Semla, Prince Edward Island.	Aug. 7	Aug. 8
Tompkinsville, N. Y.	July 29	Aug. 2	Georgetown, Prince Edward Island.	Aug. 8	Aug. 11
Jamestown, R. I.	Aug. 3	Aug. 11	Charlottetown, Prince Edward Island.	Aug. 12	Aug. 21
Portsmouth, N. H.	Aug. 12	Aug. 16	Cardigan Bay, Prince Edward Island.	Aug. 21	Aug. 22
Portland, Me.	Aug. 16	Aug. 23	Magdalen Islands.	Aug. 22	Aug. 23
Bar Harbor, Me.	Aug. 24	Aug. 31	Sydney, Cape Breton Island.	Aug. 23	Aug. 26
Southern Drill Ground.	Sept. 3	Sept. 12	Charlottetown, Prince Edward Island.	Aug. 27	Sept. 2
Fort Monroe, Va.	Sept. 12	Sept. 23	Boston, Mass.	Sept. 6	Sept. 8
Newport News, Va.	Sept. 23	Sept. 25	Navy yard, New York.	Sept. 11	Nov. 18
Yorktown, Va.	Sept. 27	Oct. 4	Off Sandy Hook.	Nov. 16	Nov. 20
Chesapeake Bay Anchorage.	Oct. 4	Oct. 5	Hampton Roads, Virginia.	Nov. 21	Nov. 24
Southern Drill Ground.	Oct. 5	Oct. 9	Norfolk, Va.	Nov. 24	Nov. 25
Port Royal, S. C.	Oct. 12	Nov. 15	Hampton Roads, Virginia.	Nov. 25	Nov. 27
Hampton Roads, Virginia.	Nov. 17	Nov. 21	Annapolis, Md.	Nov. 27	Nov. 30
Newport News, Va.	Nov. 21	Nov. 23	Trial Course, Chesapeake Bay.	Nov. 30	Dec. 1
Hampton Roads, Virginia.	Nov. 23	Nov. 24	Norfolk, Va.	Dec. 2	Dec. 7
Norfolk, Va.	Nov. 24	Dec. 11	Port au Prince, Haiti.	Dec. 9	Dec. 20
		1898.			1898.
Key West, Fla.	Dec. 15	Jan. 24	Key West, Fla.	Dec. 23	Jan. 14
	1898.	Do.			1898.
Dry Tortugas, Fla.	Jan. 24		Navassa Island.	Jan. 18	Jan. 21
Havana, Cuba.	Jan. 25		Port au Prince, Haiti.	Jan. 22	Jan. 24
			Key West, Fla.	Jan. 27	Feb. 6
Haple, Lieut. Commander W. KILLAM, commanding.			Middle Rendezvous.	Feb. 7	Feb. 8
[Transferred to the Navy Department Mar. 24, 1898. Returned to Treasury Department Aug. 11, 1898.]			Dry Tortugas, Fla.	Feb. 10	Feb. 12
	1898.	1898.	New Orleans, La.	Feb. 14	Feb. 23
Norfolk, Va.		May 10	Key West, Fla.	Feb. 26	Mar. 10
Key West, Fla.	May 15	May 26	Dry Tortugas, Fla.	Mar. 10	Do.
Havana, Cuba.	May 27	June 7	Off Port Tampa, Fla.	Mar. 11	Mar. 12
Cardenas, Cuba.	June 6	June 8	Port Tampa, Fla.	Mar. 12	Mar. 15
Havana, Cuba.	June 9	June 20	Dry Tortugas, Fla.	Mar. 16	Mar. 16
Key West, Fla.	June 21	June 25	Port Tampa, Fla.	Mar. 17	Mar. 21
Havana, Cuba, and Cardenas, Cuba.	June 26	July 7	Dry Tortugas, Fla.	Mar. 22	Mar. 22
Key West, Fla.	July 7	July 8	Key West, Fla.	Mar. 23	Apr. 22
Blockade.	July 9	July 22	Off Havana, Cuba.	Apr. 23	Apr. 25
Key West, Fla.	July 22	July 26	Off Cienfuegos, Cuba.	Apr. 27	Apr. 29
Blockade.	July 20	Aug. 11	Off Key West, Fla.	May 3	May 5
Key West, Fla.	Aug. 11		Off Cienfuegos, Cuba.	May 7	May 16
			Key West, Fla.	May 19	May 21
Mangrove, Lieut. Commander W. H. EVERETT, commanding.			Off Cienfuegos, Cuba.	May 24	May 24
Relieved by Lieut. Commander D. D. V. STUART, June 8, 1898.			Off Santiago de Cuba.	May 28	June 7
[Transferred to Navy Department Mar. 24, 1898. Returned to Treasury Department Aug. 11, 1898.]			Guantanamo Bay, Cuba.	June 7	Do.
	1898.	1898.	Off Santiago de Cuba.	June 8	June 8
Key West, Fla.	Apr. 12	Apr. 23	Guantanamo Bay, Cuba.	do	July 2
Off Havana, Cuba.	Apr. 24	Apr. 25	Off Santiago de Cuba.	July 3	July 4
Key West, Fla.	Apr. 26	Apr. 28	Guantanamo, Cuba.	July 4	Sept. 2
Off Havana, Cuba.	Apr. 29	May 9	Boston, Mass.	Sept. 9	Sept. 16
Key West, Fla.	May 9	May 16	Quebec, Canada.	Sept. 20	
Off Havana, Cuba.	May 16	May 31			
Key West, Fla.	June 1	June 10	Marietta, Commander F. M. Symonds, commanding.		
Dry Tortugas, Fla.	June 10	Do.	[Commissioned Sept. 1, 1897.]	1897.	1897.
Key West, Fla.	June 11	June 11	Mare Island, Cal.	Sept. 1	Oct. 14
Off Havana, Cuba.	June 12	June 24	San Francisco, Cal.	Oct. 16	Oct. 26
Off Cardenas, Cuba.	June 24	July 3	Victoria, British Columbia.	Oct. 29	Oct. 31
			Departure Bay.	Oct. 31	Nov. 1

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Kanawha, Lieut. F. F. Fletcher, commanding—Continued.	1898.	1898.	Lehigh, Lieut. R. G. Peck, commanding, etc.—Cont'd	1898.	1898.
Guantanamo, Cuba.....	Sept. 10	Sept. 11	Newport, R. I.....	May 2	May 2
Gibara, Cuba.....	Sept. 12	Sept. 13	Vineyard Haven, Mass.....	May 3	May 4
Port Royal, S. C.....	Sept. 18	Sept. 22	Boston, Mass.....	May 5	Aug. 6
Charleston, S. C.....	Sept. 22	Sept. 23	Provincetown, Mass.....	Aug. 6	Aug. 25
Hampton Roads, Virginia..	Sept. 24	Sept. 28	League Island, Pa.....	Aug. 30	
New York, N. Y.....	Sept. 29				
Katahdin, Commander G. F. F. Wilder, commanding.			Lesolidae, Commander W. I. Moore, commanding.		
[Commissioned Mar. 10, 1898.]	1898.	1898.	[Commissioned May 21, 1898.]	1898.	1898.
League Island, Pa.....		Apr. 7	New York, N. Y.....		May 20
Hampton Roads, Virginia...	Apr. 8	Apr. 14	Lambert Point, Virginia....	June 1	June 3
Norfolk, Va.....	Apr. 14	Apr. 21	Key West, Fla.....	June 11	July 6
Vineyard Haven, Mass.....	Apr. 23	Apr. 25	Hampton Roads, Virginia....	July 13	July 15
Provincetown, Mass.....	Apr. 25	May 3	Lambert Point, Virginia....	July 15	July 18
Boston, Mass.....	May 3	May 13	Hampton Roads, Virginia....	July 16	July 19
Provincetown, Mass.....	May 13	May 14	Norfolk, Va.....	July 19	July 22
Boston, Mass.....	May 14	June 15	Hampton Roads, Virginia....	July 23	July 24
Provincetown, Mass.....	June 15	June 16	Guantanamo Bay, Cuba.....	July 30	Aug. 14
Hampton Roads, Virginia...	June 28	June 29	Santiago de Cuba.....	Aug. 14	Aug. 18
Newport News, Va.....	June 29	Aug. 3	Guantanamo Bay, Cuba.....	Aug. 18	
Norfolk, Va.....	Aug. 3	Sept. 1			
Hampton Roads, Virginia...	Sept. 1	Sept. 16	Machias, Commander J. F. Mearns, commanding.		
League Island, Pa.....	Sept. 17		Relieved by Commander W. W. Mead, June 27, 1898. Relieved by Commander L. C. Logan, Sept. 16, 1898.		
Lancaster, Capt. Yates Stirling, commanding. Commander Thos. Perry, commanding from May 5, 1898.				1897.	1897.
[Out of commission Dec. 31, 1897, recommissioned May 5, 1898.]	1897.	1897.	Shanghai, China.....	June 18	Sept. 18
Montevideo, Uruguay.....		Sept. 5	Chefoo, China.....	Sept. 18	Oct. 3
Rio de Janeiro, Brazil.....	Sept. 10	Sept. 12	Tongshanfu.....	Oct. 3	Do.
Bahia, Brazil.....	Sept. 16	Sept. 21	Newchwang.....	Oct. 4	Oct. 9
St. Lucia, West Indies.....	Oct. 15	Oct. 26	Nagasaki, Japan.....	Oct. 12	Nov. 11
Hampton Roads, Virginia...	Nov. 4	Nov. 12	Hongkong, China.....	Nov. 15	Dec. 1
Newport News, Va.....	Nov. 12	Nov. 15	Singapore, China.....	Dec. 6	Dec. 11
			Columbo.....	Dec. 18	Dec. 25
Boston, Mass.....	Nov. 18	May 19		1898.	1898.
	1898.	May 27	Aden.....	Jan. 2	Jan. 4
Charleston, S. C.....	May 26	Aug. 18	Buenos Aires.....	Jan. 15	Jan. 15
Key West, Fla.....	May 31	Sept. 1	Isabella.....	do	Jan. 16
Hampton Roads, Virginia...	Aug. 22		Port Said.....	Jan. 16	Jan. 20
Portsmouth, N. H.....	Sept. 3		Villafraiche.....	Jan. 20	Jan. 23
Lebanon, Lieut. Commander C. T. Foose, commanding.			Genoa.....	Jan. 30	Feb. 8
[Commissioned Apr. 10, 1898.]	1898.	1898.	Algiers.....	Feb. 10	Feb. 17
Boston, Mass.....	Apr. 16	May 17	Gibraltar.....	Feb. 14	Feb. 17
Lambert Point, Virginia...	May 20	May 23	Madeira.....	Feb. 21	Feb. 23
Key West, Fla.....	May 28	May 29	Hampton Roads, Virginia...	Mar. 9	Mar. 9
Cardenas, Cuba.....	June 4	June 13	Norfolk (navy-yard).....	do	Mar. 15
Key West, Fla.....	June 14	June 24	Hampton Roads, Virginia...	Mar. 15	Mar. 18
Guantanamo, Cuba.....	June 28	June 28	Boston, Mass.....	Mar. 18	Apr. 7
Off Santiago de Cuba.....	June 29	June 30	Key West, Fla.....	Apr. 15	Apr. 22
Altarea, Cuba.....	July 11	July 14	Do.....	May 16	May 27
Guantanamo, Cuba.....	July 14	July 17	Do.....	June 17	July 5
Key West, Fla.....	July 19	Aug. 3	Guantanamo, Cuba.....	July 8	July 8
Guantanamo, Cuba.....	Aug. 7	Aug. 10	Siboney, Cuba.....	July 9	July 12
Key West, Fla.....	Aug. 13	Aug. 18	Guantanamo, Cuba.....	July 12	July 14
Hampton Roads, Virginia...	Aug. 22	Aug. 30	Key West, Fla.....	July 18	Aug. 6
Norfolk, Va.....	Aug. 30		Off Havana, Cuba.....	Aug. 10	Aug. 11
Lehigh, Lieut. R. G. Peck, commanding. Relieved by Lieut. A. B. Denny, July 17, 1898.			Off Matanzas, Cuba.....	Aug. 11	Aug. 13
[Commissioned April 18, 1898, out of commission Sept. 6, 1898.]	1898.	1898.	Off Cardenas, Cuba.....	Aug. 13	Do.
League Island, Pa.....		Apr. 30	Key West, Fla.....	Aug. 15	Aug. 18
			Hampton Roads, Virginia...	Aug. 22	Aug. 25
			Provincetown, Mass.....	Sept. 1	Sept. 7
			Boston, Mass.....	Sept. 2	
			Maine, Capt. Chas. D. Siosber, commanding.		
			[Blown up Feb. 15, 1898, in Havana Harbor.]		
				1897.	1897.
			Hampton Roads, Virginia...	June 25	July 1
			Lynn Haven Bay, Virginia...	July 1	July 3
			Southern Drill Ground.....	July 2	July 3
			Delaware Breakwater, Del..	July 4	July 5
			Newcastle, Del.....	July 5	July 7
			Woodland Beach, Del.....	July 7	July 8

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Michigan , Lieut. Commander R. EUSH, commanding. Relieved by Lieut. Commander W. H. EVERETT, Mar. 1, 1898. Relieved by Boatswain CHAS. MILLER, Apr. 15, 1898.			Menadnock , Capt. W. H. WHITING, commanding—Continued.		
Washburn, Wis.	1897. June 28	1897. July 2	San Francisco, Cal.	1898. Mar. 24	1898. Apr. 22
Detroit, Mich.	July 6	July 11	Port Angeles, Wash.	Apr. 26	May 30
Mackinac, Mich.	July 12	July 17	Do.	May 30	May 31
Detroit, Mich.	July 18	July 20	Mare Island, Cal.	June 4	June 21
Sandusky, Ohio.	July 20	July 30	San Francisco, Cal.	June 21	June 23
Detroit, Mich.	July 30	Aug. 1	Honolulu, Hawaiian Islands	July 3	July 13
Mackinac, Mich.	Aug. 2	Aug. 7	Manila, Philippine Islands.	Aug. 10	
Chicago, Ill.	Aug. 8	Aug. 16	Monocacy , Commander O. W. FAUENHOLT, commanding.		
Mackinac, Mich.	Aug. 20	Sept. 16	Shanghai, China.	1897. Mar. 16	1897. July 8
Detroit, Mich.	Sept. 17	Sept. 26	Chinkiang.	July 11	July 13
Erie, Pa.	Sept. 27	Oct. 6	Wuhu.	July 13	July 15
Dunkirk, N. Y.	Oct. 6	Oct. 9	Hankow.	July 18	Aug. 1
Erie, Pa.	Oct. 9		Kinkiang.	Aug. 1	Aug. 8
Minneapolis , Capt. T. F. JEWELL, commanding.			Wuhu.	Aug. 9	Aug. 10
[In reserve until Mar. 31, 1898.]			Chinkiang.	Aug. 10	Aug. 15
League Island, Pa.	1898. Apr. 2	1898. Apr. 1	Shanghai.	Aug. 16	Oct. 9
Hampton Roads, Virginia. .	Apr. 13	Apr. 13	Woosung.	Oct. 9	Oct. 12
Southern Drill Grounds.	Apr. 13	Apr. 15	Hankow.	Oct. 17	Oct. 20
Newport News, Va.	Apr. 15	Apr. 16	Kinkiang.	Oct. 20	Oct. 21
Hampton Roads, Virginia. .	Apr. 16	Apr. 23	Wuhu.	Oct. 22	Oct. 23
Prospect Harbor, Maine.	Apr. 26	Apr. 27	Chinkiang.	Oct. 23	Oct. 26
Eastport, Me.	Apr. 27	Apr. 28	Woosung.	Oct. 27	Oct. 30
Machias Bay, Maine.	Apr. 28	Apr. 29	Shanghai.	Oct. 30	
Rockland, Me.	Apr. 30	Apr. 30	Montauk , Commander E. T. STRONG, commanding. Relieved by Lieut. L. L. REAMEY May 2, 1898. Relieved by Lieut. H. R. COHEN July 4, 1898. Relieved by Lieut. R. J. BRACH July 9, 1898.		
Portland, Me.	do.	May 1	[Commissioned April 12, 1898. Out of commission September 13, 1898.]		
Portsmouth, N. H.	May 1	May 2	League Island, Pa.	1898. May 7	1898. May 9
Boston Light, Boston Bay, Massachusetts.	May 2	May 8	Delaware Breakwater, Del. .	May 11	May 12
Newport, R. I.	May 4	May 5	Vineyard Haven, Mass.	May 13	Aug. 18
Newport News, Va.	May 6	May 10	Cushing's Island, Maine.	Aug. 18	Aug. 20
Hampton Roads, Virginia. .	May 10	May 13	Boston, Mass.	Aug. 21	Aug. 26
Cape Haitien, Haiti.	May 17	May 17	Provincetown, Mass.	Aug. 26	Do.
Charlotte Amalia, St. Thomas	May 19	May 20	Vineyard Haven, Mass.	Aug. 27	Aug. 29
Key West, Fla.	May 31	June 6	New London, Conn.	Aug. 29	Aug. 30
Hampton Roads, Virginia. .	June 9	June 11	Tompkinsville, N. Y.	Aug. 31	Sept. 2
Newport News, Va.	June 11	Aug. 17	Delaware River, Delaware	Sept. 3	Sept. 4
Philadelphia, Pa.	Aug. 18		League Island, Pa.	Sept. 4	
Michigan , Commander G. M. BOCK, commanding.			Montgomery , Commander A. A. CONVERSE, commanding.		
[Commissioned Jan. 10, 1898.]			Pensacola, Fla. (navy yard)	1897. June 15	1897. July 2
San Francisco, Cal.	1898. Feb. 8	1898. Mar. 5	Pensacola, Fla.	July 2	Aug. 8
Mare Island, Cal.	Mar. 5	Mar. 10	Ship Island, Miss.	Aug. 8	Aug. 15
Honolulu, Hawaiian Islands	Mar. 10	Mar. 19	Pensacola, Fla.	Aug. 16	Aug. 19
San Francisco, Cal.	May 12	May 21	Tompkinsville, N. Y.	Aug. 26	Aug. 27
Mare Island, Cal.	May 21	June 5	New York (navy yard)	Aug. 27	Oct. 16
San Francisco, Cal.	June 5	Do.	Off 128th street, New York .	Oct. 10	Oct. 17
Honolulu, Hawaiian Islands	June 15	June 20	Tompkinsville, N. Y.	Oct. 17	Oct. 20
Lahania, Hawaiian Islands	June 26	June 28	Key West, Fla.	Oct. 24	Oct. 26
Honolulu, Hawaiian Islands	June 28	Aug. 23	Do.	Nov. 2	Nov. 10
San Francisco, Cal.	Sept. 14	Sept. 16	Pensacola, Fla.	Nov. 12	Dec. 24
Mare Island, Cal.	Sept. 16		Charlotte Harbor, Florida .	Dec. 26	Dec. 31
Menadnock , Capt. W. H. WHITING, commanding.			Do.	1898. Dec. 31	1898. Jan. 3
Portland Oreg.	1897. June 28	1897. July 10	Port Tampa, Fla.	1898. Jan. 3	1898. Jan. 7
Astoria, Oreg.	July 10	July 11	Pensacola, Fla.	Jan. 6	Jan. 11
Eureka, Cal.	July 14	July 23	Port Tampa, Fla.	Jan. 12	Jan. 13
San Francisco, Cal.	July 24	Aug. 1	Key West, Fla.	Jan. 14	Jan. 24
Mare Island, Cal.	Aug. 1	1898. Jan. 5	Dry Tortugas, Fla.	Jan. 24	Jan. 31
San Diego, Cal.	1898. Jan. 8	1898. Jan. 29	Key West, Fla.	Jan. 31	Feb. 2
Magdalena Bay, Lower California.	Feb. 2	Feb. 7			
San Diego, Cal.	Feb. 11	Mar. 21			

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Richman, Lieut. Commander E. KUSH commanding. Relieved by Lieut. Commander W. H. EVERETT Mar. 1, 1898. Relieved by Boat-capt. CHAS. MILLER, Apr. 15, 1898.			Moundcock, Capt. W. H. WHITING, commanding—Continued.		
	1897.	1897.		1898.	1898.
Washington, Wis.	June 28	July 2	San Francisco, Cal.	Mar. 24	Apr. 23
Detroit, Mich.	July 6	July 11	Port Angeles, Wash.	Apr. 26	May 30
Mackinac, Mich.	July 12	July 17	Do.	May 30	May 31
Detroit, Mich.	July 18	July 20	Mare Island, Cal.	June 4	June 21
Sandusky, Ohio.	July 20	July 30	San Francisco, Cal.	June 21	June 23
Detroit, Mich.	July 30	Aug. 1	Honolulu, Hawaiian Islands.	July 3	July 11
Mackinac, Mich.	Aug. 2	Aug. 7	Manila, Philippine Islands.	Aug. 16	
Chicago, Ill.	Aug. 8	Aug. 16			
Mackinac, Mich.	Aug. 20	Sept. 16	Monocacy, Commander O. W. FARENHOLT, commanding	1897	1897
Detroit, Mich.	Sept. 17	Sept. 28	Shanghai, China.	Mar. 16	July 8
Emp. Pa.	Sept. 27	Oct. 6	Chinkiang.	July 11	July 13
Dunkirk, N. Y.	Oct. 6	Oct. 9	Wuhu.	July 13	July 15
Erie, Pa.	Oct. 9		Hankow.	July 18	Aug. 1
			Kinkiang.	Aug. 1	Aug. 8
Blissopella, Capt. T. F. JEWELL, commanding.			Wuhu.	Aug. 9	Aug. 10
[In reserve until Mar. 31, 1898.]			Chinkiang.	Aug. 10	Aug. 15
	1898.	1898.	Shanghai.	Aug. 16	Oct. 9
League Island, Pa.	Apr. 1	Apr. 1	Woosung.	Oct. 9	Oct. 12
Hampton Roads, Virginia.	Apr. 2	Apr. 13	Hankow.	Oct. 17	Oct. 20
Southern Drill Grounds.	Apr. 13	Apr. 15	Kinkiang.	Oct. 20	Oct. 21
Newport News, Va.	Apr. 15	Apr. 16	Wuhu.	Oct. 22	Oct. 23
Hampton Roads, Virginia.	Apr. 16	Apr. 23	Chinkiang.	Oct. 23	Oct. 26
Prospect Harbor, Maine.	Apr. 26	Apr. 27	Woosung.	Oct. 27	Oct. 30
Kentport, Me.	Apr. 27	Apr. 28	Shanghai.	Oct. 30	
Machias Bay, Maine.	Apr. 28	Apr. 29			
Rockland, Me.	Apr. 30	Apr. 30	Montank, Commander E. T. STRONG, commanding. Relieved by Lieut. L. L. REANEY May 2, 1898. Relieved by Lieut. H. R. COHEN July 4, 1898. Relieved by Lieut. R. J. BEACH July 9, 1898.		
Portland, Me.	do.	May 1	[Commissioned April 18, 1898. Out of commission September 13, 1898.]		
Portsmouth, N. H.	May 1	May 2		1898.	1898.
Boston Light, Boston Bay, Massachusetts.	May 2	May 3	League Island, Pa.		May 7
Newport, R. I.	May 4	May 5	Delaware Breakwater, Del.	May 7	May 9
Newport News, Va.	May 6	May 10	Vineyard Haven, Mass.	May 11	May 12
Hampton Roads, Virginia.	May 10	May 13	Portland, Me.	May 13	Aug. 18
Cape Hatteras, Hatteras.	May 17	May 17	Cushings Island, Maine.	Aug. 18	Aug. 20
Charlotte Amalie, St. Thomas	May 19	May 20	Boston, Mass.	Aug. 21	Aug. 26
Key West, Fla.	May 31	June 6	Provincetown, Mass.	Aug. 28	Do.
Hampton Roads, Virginia.	June 9	June 11	Vineyard Haven, Mass.	Aug. 27	Aug. 29
Newport News, Va.	June 11	Aug. 17	New London, Conn.	Aug. 29	Aug. 30
Philadelphia, Pa.	Aug. 18		Tompkinsville, N. Y.	Aug. 31	Sept. 2
			Delaware River, Delaware.	Sept. 3	Sept. 4
Richman, Commander G. M. BOOK, commanding.			League Island, Pa.	Sept. 4	
[Commissioned Jan. 10, 1898.]					
	1898.	1898.	Montgomery, Commander G. A. CONVERSE, commanding	1897.	1897
San Francisco, Cal.	Feb. 6	Mar. 5	Pensacola, Fla. (navy yard)	June 15	July 2
Mare Island, Cal.	Mar. 5	Mar. 10	Pensacola, Fla.	July 2	Aug. 8
Honolulu, Hawaiian Islands.	Mar. 10	Mar. 19	Ship Island, Miss.	Aug. 8	Aug. 15
San Francisco, Cal.	May 12	May 21	Pensacola, Fla.	Aug. 16	Aug. 19
Mare Island, Cal.	May 21	June 5	Tompkinsville, N. Y.	Aug. 26	Aug. 27
San Francisco, Cal.	June 5	Do.	New York (navy-yard)	Aug. 27	Oct. 16
Honolulu, Hawaiian Islands.	June 15	June 26	Off 128th street, New York ..	Oct. 16	Oct. 17
Lahaina, Hawaiian Islands.	June 26	June 28	Tompkinsville, N. Y.	Oct. 17	Oct. 20
Honolulu, Hawaiian Islands.	June 28	Aug. 23	Key West, Fla.	Oct. 24	Oct. 26
San Francisco, Cal.	Sept. 14	Sept. 16	Do.	Nov. 2	Nov. 10
Mare Island, Cal.	Sept. 16		Pensacola, Fla.	Nov. 12	Dec. 24
			Charlotte Harbor, Florida ..	Dec. 26	Dec. 31
Moundcock, Capt. W. H. WHITING, commanding.					
	1897.	1897.	Do.	Dec. 31	1898.
Portland, Oreg.	June 28	July 10			Jan. 3
Astoria, Oreg.	July 10	July 11			
Eureka, Cal.	July 13	July 23			
San Francisco, Cal.	July 24	Aug. 1			
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Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Ceresia, Lieut. J. L. PUNCHILL, commanding—Continued.			Peoria, Lieut. T. W. RYAN, commanding—Continued.		
	1898.	1898.		1898.	1898.
Balquairi, Cuba	June 23	June 23	Key West, Fla.	July 14	July 21
Guantanamo, Cuba	June 23	June 24	Off Havana, Cuba	July 23	Aug. 11
Balquairi, Cuba	June 25	June 26	Port Royal, S. C.	Aug. 21	Aug. 24
Balquairi and Siboney, Cuba ..	June 26	Do.	Hampton Roads, Virginia ..	Aug. 26	Aug. 28
Guantanamo, Cuba	do	Do.	New York, N. Y.	Aug. 30	Sept. 4
Off Santiago de Cuba	June 27	June 27	New London, Conn.	Sept. 4	Sept. 8
Cape Cruz, Cuba	June 28	June 30	Tompkinsville, N. Y.	Sept. 9	Sept. 20
Manzanillo, Cuba	July 1	July 5	New York (navy-yard)	Sept. 20	
Siboney, Cuba	July 6	July 6			
Guantanamo, Cuba	July 7	July 9	Perry, Capt. W. F. KILGORE, R. C. S., commanding		
Balquairi, Cuba	July 10	July 10	[Transferred to the Navy Department Apr. 24, 1898, returned to the Treasury Department Aug. 24, 1898.]		
Guantanamo, Cuba	do	Do.		1898.	1898.
Balquairi, Cuba	do	July 12	Seattle, Wash.		June 2
Guayabal, Cuba	July 13	July 18	Port Townsend, Wash.	June 2	June 3
Manzanillo, Cuba	July 18	July 19	Naval Station, Puget Sound, Wash.	June 3	June 4
Guayabal, Cuba	July 19	July 20	Seattle, Wash.	June 4	Do.
Santa Cruz del Sur, Cuba	July 20	Do.	Puget Sound, Wash.	do	June 14
Guayabal, Cuba	do	July 25	Seattle, Wash.	June 14	June 16
Tunas, Cuba	July 26	July 26	Naval Station, Puget Sound ..	June 16	June 29
Guayabal, Cuba	July 29	July 29	Seattle, Wash.	June 20	Do.
Guantanamo, Cuba	July 30	Aug. 8	Naval Station, Puget Sound ..	do	Do.
Balquairi, Cuba	Aug. 9	Aug. 10	Seattle, Wash.	do	June 30
Guantanamo, Cuba	Aug. 10	Do.	Port Townsend, Wash.	June 30	July 1
Manzanillo, Cuba	Aug. 12	Aug. 13	Seattle, Wash.	July 1	July 5
Cape Cruz, Cuba	Aug. 13	Aug. 14	Naval Station, Puget Sound ..	July 6	July 9
Cienfuegos, Cuba	Aug. 15	Aug. 15	Seattle, Wash.	July 9	July 11
Key West, Fla.	Aug. 18	Aug. 19	Naval Station, Puget Sound ..	July 11	July 14
Hampton Roads, Virginia	Aug. 23	Aug. 24	Seattle, Wash.	July 14	Do.
Norfolk, Va.	Aug. 24	Sept. 6	Naval Station, Puget Sound ..	do	July 20
Boston, Mass. (navy-yard) ..	Sept. 9		Seattle, Wash.	July 20	Do.
			Naval Station, Puget Sound ..	do	Do.
Parthor, Commander GEO. C. REITER, commanding.			Seattle, Wash.	July 22	July 23
	1898.	1898.	Port Townsend, Wash.	July 24	July 26
[Commissioned Apr. 30, 1898.]			Astoria, Oreg.	July 26	July 30
New York, N. Y.	Apr. 23	Apr. 23	Fort Stevens, Oreg.	July 31	Aug. 1
Hampton Roads, Virginia ..	Apr. 23	Apr. 26	Fort Stevens, Oreg.	Aug. 1	Aug. 2
Key West, Fla.	Apr. 29	May 24	Astoria, Oreg.	Aug. 2	Do.
Do	June 1	June 7	Fort Stevens, Oreg.	do	Aug. 4
Off Santiago de Cuba	June 10	June 10	Astoria, Oreg.	Aug. 4	Aug. 8
Guantanamo, Cuba	do	June 24	Fort Stevens, Oreg.	Aug. 8	Aug. 12
New York, N. Y.	June 28	Aug. 21	Astoria, Oreg.	Aug. 12	Do.
Santiago de Cuba	Aug. 25	Aug. 26	Havel, Oreg.	July 13	July 13
Montauk Point, New York ..	Aug. 31	Sept. 1	Astoria, Oreg.	Aug. 13	Aug. 13
New York N. Y.	Sept. 2	Sept. 13	Port Stevens, Oreg.	do	Aug. 15
Norfolk, Va.	Sept. 14	Sept. 15	Havel, Oreg.	Aug. 15	Do.
New York N. Y.	Sept. 16	Sept. 21	Astoria, Oreg.	do	Aug. 17
Boston, Mass.	Sept. 22	Sept. 23	Port Townsend, Wash.	Aug. 18	Aug. 18
Portsmouth, N. H.	Sept. 23	Sept. 24	Naval Station, Puget Sound ..	do	Aug. 20
New York, N. Y.	Sept. 25	Sept. 27	Seattle, Wash.	Aug. 20	Aug. 21
Norfolk, Va.	Sept. 28	Sept. 29	Astoria, Oreg.	Aug. 22	
Philadelphia, Pa.	Sept. 29				
Pennac, Lieut. F. H. SHREMAN, commanding. Relieved by Lieut. L. W. BARTLETT, July 28, 1898. Relieved by Lieut. J. W. BOSTON, Aug. 20, 1898.			Petrel, Commander E. P. WOOD, commanding		
	1898.	1898.		1897.	1897.
[Commissioned May 16, 1898. Out of commission Sept 11, 1898.]			Chemulpo, Korea.	June 15	Sept. 8
Port Royal, S. C.	June 14	June 8	Keumpalal Korea	Sept. 8	Sept. 10
Key West, Fla.	June 28	June 23	Chemulpo, Korea	Sept. 10	Sept. 17
Panama, Fla.	July 4	July 2	Chafu, China	Sept. 18	Oct. 2
Panama, Fla.	Aug. 28	Aug. 27	Shanghai, China	Oct. 5	Nov. 15
			Ningpo, China	Nov. 16	Nov. 21
Peoria, Lieut. T. W. RYAN, commanding.			Poo how China	Nov. 23	Nov. 30
	1898.	1898.	Amoy, China	Dec. 2	Dec. 9
[Commissioned May 15, 1898.]			Swatow, China	Dec. 10	Dec. 15
Longue Island, Pa.	June 17	June 12	Mira Bay, China	Dec. 16	Dec. 19
Port Royal, S. C.	June 17	June 18	Hongkong, China	Dec. 19	Dec. 29
Key West, Fla.	June 21	June 25			
Las Tunas, Cuba	June 30	July 2	Canton	Dec. 29	Feb. 14
Palo Alto, Cuba	July 3	July 11		1898.	
			Hongkong	Feb. 14	Apr. 24
			Mira Bay	Apr. 24	Apr. 27
			Manila, Philippine Islands ..	May 1	

Movements of vessels—Continued.[illegible]

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Greola, Lieut. J. L. FURCH, commanding—Continued.	1898.	1898.	Peoria, Lieut. T. W. RYAN, commanding—Continued.	1898.	1898.
Baquiri, Cuba	June 23	June 23	Key West, Fla	July 14	July 21
Guantanamo, Cuba	June 23	June 24	Off Havana, Cuba	July 22	Aug. 11
Baquiri, Cuba	June 25	June 26	Port Royal, S. C.	Aug. 21	Aug. 24
Baquiri and Siboney, Cuba	June 26	Do.	Hampton Roads, Virginia	Aug. 26	Aug. 28
Guantanamo, Cuba	do	Do.	New York, N. Y.	Aug. 30	Sept. 4
Off Santiago de Cuba	June 27	June 27	New London, Conn.	Sept. 4	Sept. 8
Cape Cruz, Cuba	June 28	June 30	Tompkinsville, N. Y.	Sept. 9	Sept. 20
Manzanillo, Cuba	July 1	July 5	New York (navy-yard)	Sept. 20	
Siboney, Cuba	July 6	July 6			
Guantanamo, Cuba	July 7	July 9	Perry, Capt. W. F. KILGORE, R. C. S., commanding		
Baquiri, Cuba	July 10	July 10	[Transferred to the Navy Department Apr. 24, 1898, returned to the Treasury Department Aug. 24, 1898.]		
Guantanamo, Cuba	do	Do.		1898.	1898.
Baquiri, Cuba	do	July 12	Seattle, Wash		June 2
Guayabal, Cuba	July 13	July 18	Port Townsend, Wash	June 2	June 8
Manzanillo, Cuba	July 18	July 19	Naval Station, Puget Sound, Wash	June 3	June 4
Guayabal, Cuba	July 19	July 20	Seattle, Wash	June 4	Do.
Santa Cruz del Sur, Cuba	July 20	Do.	Puget Sound, Wash	do	June 14
Guayabal, Cuba	do	July 25	Seattle, Wash	June 14	June 16
Tunas, Cuba	July 26	July 26	Naval Station, Puget Sound	June 16	June 29
Guayabal, Cuba	July 29	July 29	Seattle, Wash	June 29	Do.
Guantanamo, Cuba	July 30	Aug. 8	Naval Station, Puget Sound	do	Do.
Baquiri, Cuba	Aug. 9	Aug. 10	Seattle, Wash	do	June 30
Guantanamo, Cuba	Aug. 10	Do.	Port Townsend, Wash	June 30	July 1
Manzanillo, Cuba	Aug. 12	Aug. 13	Seattle, Wash	July 1	July 5
Cape Cruz, Cuba	Aug. 13	Aug. 14	Naval Station, Puget Sound	July 5	July 9
Cienfuegos, Cuba	Aug. 15	Aug. 15	Seattle, Wash	July 9	July 11
Key West, Fla	Aug. 18	Aug. 19	Naval Station, Puget Sound	July 11	July 14
Hampton Roads, Virginia	Aug. 23	Aug. 24	Seattle, Wash	July 14	Do.
Verfolk, Va	Aug. 24	Sept. 6	Naval Station, Puget Sound	do	July 20
Boston, Mass. (navy-yard)	Sept. 9		Seattle, Wash	July 20	Do.
			Naval Station, Puget Sound	do	Do.
Panther, Commander GEO. C. KERR, commanding.			Seattle, Wash	do	July 23
[Commissioned Apr. 30, 1898.]	1898.	1898.	Port Townsend, Wash	July 22	July 23
New York, N. Y.	Apr. 23	Apr. 23	Astoria, Oreg	July 24	July 26
Hampton Roads, Virginia	Apr. 23	Apr. 26	Fort Stevens, Oreg	July 26	July 30
Key West, Fla	Apr. 29	May 24	Astoria, Oreg	July 30	Aug. 1
do	June 1	June 7	Fort Stevens	Aug. 1	Aug. 3
Off Santiago de Cuba	June 10	June 10	Astoria, Oreg	Aug. 2	Do.
Guantanamo, Cuba	do	June 24	Fort Stevens, Oreg	do	Aug. 4
New York, N. Y.	June 28	Aug. 21	Astoria, Oreg	Aug. 4	Aug. 8
Santiago de Cuba	Aug. 25	Aug. 26	Fort Stevens, Oreg	Aug. 6	Aug. 12
Manzanillo Point, New York	Aug. 31	Sept. 1	Astoria, Oreg	Aug. 12	Do.
New York, N. Y.	Sept. 3	Sept. 13	Havel, Oreg	July 12	July 13
Verfolk, Va	Sept. 14	Sept. 15	Astoria, Oreg	Aug. 13	Aug. 13
New York, N. Y.	Sept. 16	Sept. 21	Fort Stevens, Oreg	do	Aug. 15
Boston, Mass	Sept. 23	Sept. 23	Havel, Oreg	Aug. 15	Do.
Portsmouth, N. H.	Sept. 23	Sept. 24	Astoria, Oreg	do	Aug. 17
New York, N. Y.	Sept. 25	Sept. 27	Port Townsend, Wash	Aug. 18	Aug. 18
Verfolk, Va	Sept. 28	Sept. 29	Naval Station, Puget Sound	do	Aug. 20
Philadelphia, Pa	Sept. 29		Seattle, Wash	Aug. 20	Aug. 21
			Astoria, Oreg	Aug. 22	
Panther, Lieut. F. H. SHERR, commanding. Relieved by Lieut. L. W. BARTLETT, July 28, 1898. Relieved by Lieut. J. W. BORTICK, Aug. 20, 1898.			Petrel, Commander E. P. WOOD, commanding.	1897.	1897.
[Commissioned May 16, 1898. Out of commission Sept. 11, 1901.]	1898.	1898.	Chemulpo, Korea	June 15	Sept. 8
Port Royal, S. C.	June 14	June 8	Keonpaui, Korea	Sept. 8	Sept. 10
Key West, Fla	June 28	June 23	Chemulpo, Korea	Sept. 10	Sept. 17
Port Eads, La	July 4	Aug. 27	Chefoo, China	Sept. 18	Oct. 2
Panama, Fla	Aug. 28		Shanghai, China	Oct. 5	Nov. 15
			Ningpo, China	Nov. 16	Nov. 21
Peoria, Lieut. T. W. RYAN, commanding.			Foochow, China	Nov. 23	Nov. 30
[Commissioned May 15, 1898.]	1898.	1898.	Amoy, China	Dec. 2	Dec. 9
League Island, Pa	June 12	June 12	Swatow, China	Dec. 10	Dec. 15
Port Royal, S. C.	June 17	June 18	Mira Bay, China	Dec. 16	Dec. 19
Key West, Fla	June 21	June 25	Hongkong, China	Dec. 19	Dec. 29
San Juan, Cuba	June 30	July 2			
Panama, Cuba	July 3	July 11	Canton	Dec. 29	1898.
					Feb. 14
			Hongkong	1898.	
			Mira Bay	Feb. 14	Apr. 24
			Manila, Philippine Islands	Apr. 24	Apr. 27
				May 1	

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Philadelphia, Capt. N. M. DYER, commanding.			Petomac, Lieut. G. P. BLOW, commanding—Continued.		
[Out of commission Dec. 18, 1897. Recommissioned July 9, 1898.]				1898.	1898.
Honolulu, Hawaiian Islands.	1897.	1897.	Maria Teresa wreck.....	Aug. 3	Aug. 4
Lahaina Roads, Hawaiian Islands.....	Apr. 17	Sept. 17	Guantanamo Bay, Cuba.....	Aug. 4	Aug. 5
Do.....	Sept. 17	Sept. 18	Maria Teresa wreck.....	Aug. 5	Aug. 6
Honolulu, Hawaiian Islands.....	Sept. 18	Sept. 19	Cristobal Colon wreck.....	Aug. 6	Aug. 7
San Francisco, Cal.....	Sept. 20	Oct. 5	Guantanamo Bay, Cuba.....	Aug. 7	Aug. 10
Maro Island, Cal.....	Oct. 14	Oct. 14	Maria Teresa wreck.....	Aug. 10	Do.
			Cristobal Colon wreck.....	do	Do.
Maro Island, Cal.....		1898.	Maria Teresa wreck.....	do	Aug. 13
		July 26	Santiago de Cuba.....	Aug. 12	Aug. 13
San Francisco, Cal.....	1898.	July 27	Maria Teresa wreck.....	Aug. 13	Aug. 14
Honolulu, Hawaiian Islands.....	July 26	Aug. 23	Guantanamo Bay, Cuba.....	Aug. 14	Aug. 15
Hilo, Hawaiian Islands.....	Aug. 3	Aug. 23	Maria Teresa wreck.....	Aug. 15	Do.
Honolulu, Hawaiian Islands.....	Aug. 24	Aug. 26	Guantanamo Bay, Cuba.....	do	Aug. 16
Honolulu, Hawaiian Islands.....	Aug. 27	Sept. 19	Bay of Joa.....	Aug. 16	Aug. 23
Waianae, Hawaiian Islands.....	Sept. 20	Sept. 21	Guantanamo Bay, Cuba.....	Aug. 23	Aug. 24
Honolulu, Hawaiian Islands.....	Sept. 21	Sept. 29	Bay of Joa.....	Aug. 24	Sept. 1
Piscataqua, Lieut. Commander N. E. NILES, commanding. Relieved by Lieut. F. A. BALLASEYUS Sept. 27, 1898.			Guantanamo Bay, Cuba.....	Sept. 2	Sept. 14
[Commissioned June 18, 1898. Out of commission Oct. 4, 1898.]			St. Nicolas Mole, Haiti.....	Sept. 15	Sept. 15
Portsmouth, N. H.....	1898.	July 7	Guantanamo Bay, Cuba.....	do	Sept. 19
Hampton Roads, Virginia.....	July 10	July 16	Maria Teresa wreck.....	Sept. 19	Do.
Key West, Fla.....	July 21	July 27	Guantanamo Bay, Cuba.....	do	Sept. 23
Off Havana, Cuba.....	July 28	July 28	Maria Teresa wreck.....	Sept. 23	Sept. 29
Mariel, Cabanas, and Bahia Honda, Cuba.....	do	Aug. 2	Guantanamo Bay, Cuba.....	do	
Off Havana, Cuba.....	Aug. 2	Aug. 13			
Key West, Fla.....	Aug. 14	Aug. 19	Powhatan, Lieut. F. M. RUSSELL, commanding		
Hampton Roads, Virginia.....	Aug. 23	Aug. 25	[Commissioned Apr. 20, 1896. Out of commission Aug. 25, 1896.]		
Provincetown, Mass.....	Aug. 27	Aug. 28		1898.	1898.
League Island, Pa.....	Aug. 30	Sept. 21	Pensacola, Fla.....		June 11
Portsmouth, N. H.....	Sept. 23		Fort Morgan, Ala.....	June 12	June 13
Pompey, Lieut. Commander E. W. STURDY, commanding. Relieved by Commander J. W. Miller June 7, 1898.			Mobile, Ala.....	do	July 10
[Commissioned May 26, 1898.]			Fort Morgan, Ala.....	July 10	July 13
New York (navy yard).....	1898.	May 30	Mobile, Ala.....	July 13	July 17
Lamberts Point, Virginia.....	May 31	June 2	Fort Morgan, Ala.....	July 17	July 27
Key West, Fla.....	June 6	June 13	Mobile, Ala.....	July 27	July 28
Off Havana, Cuba.....	June 13	Do.	Fort Morgan, Ala.....	July 28	Aug. 4
Off Cardenas, Cuba.....	June 14	Aug. 2	Pensacola, Fla.....	Aug. 5	Aug. 7
Key West, Fla.....	Aug. 3	Aug. 11	St. Josephs Bay, Florida.....	Aug. 7	Aug. 8
Ile of Pines, Cuba.....	Aug. 13	Aug. 17	Pensacola, Fla.....	Aug. 8	
Key West, Fla.....	Aug. 19	Aug. 20			
Hampton Roads, Virginia.....	Aug. 23	Sept. 22	Prairie, Commander C. J. TRAIN, commanding.		
Norfolk, Va. (navy yard).....	do		[Commissioned Apr. 14, 1896.]		
Petomac, Lieut. G. P. BLOW, commanding.				1898.	1898.
[Commissioned Apr. 15, 1896.]			Tompkinsville, N. Y.....	May 13	May 14
Pensacola, Fla.....	1898.	May 30	Provincetown, Mass.....	May 15	May 16
Port Eads, La.....	May 30	June 8	Do.....	May 19	May 21
Igiera, La.....	June 8	June 14	Do.....	May 25	May 27
New Orleans, La.....	June 14	July 13	Do.....	June 1	June 7
Port Eads, La.....	July 14	July 14	Do.....	June 8	June 15
Santiago de Cuba.....	July 18	July 20	Delaware Breakwater, Del.....	June 12	June 13
Guantanamo Bay, Cuba.....	July 20	July 21	Provincetown, Mass.....	June 14	June 15
Maria Teresa wreck.....	July 21	July 25	Delaware Breakwater, Del.....	June 18	June 19
Guantanamo, Cuba.....	July 25	July 26	Tompkinsville, N. Y.....	June 20	June 27
Maria Teresa wreck.....	July 26	July 30	Key West, Fla.....	July 1	July 1
Guantanamo Bay, Cuba.....	July 30	Do.	Off Havana, Cuba.....	July 2	July 11
Maria Teresa wreck.....	July 31	July 31	Off Gibara, Cuba.....	July 12	July 24
Guantanamo Bay, Cuba.....	do	Aug. 2	Guantanamo, Cuba.....	July 25	July 27
Maria Teresa wreck.....	Aug. 2	Do.	Off San Juan, Porto Rico.....	July 30	July 31
Santiago de Cuba.....	do	Aug. 3	Ponce, Porto Rico.....	Aug. 1	Aug. 14
			Santiago de Cuba.....	Aug. 20	Aug. 21
			Fort Pond Bay New York.....	Aug. 28	Aug. 28
			Fall River, Mass.....	Aug. 28	Aug. 30
			Tompkinsville, N. Y.....	Aug. 31	Sept. 19
			Delaware Breakwater, Del.....	Sept. 19	Sept. 20
			League Island, Pa.....	Sept. 20	Sept. 26
			Princeton, Commander C. H. WEST, commanding		
			[Commissioned May 27, 1898.]		
				1898.	1898.
			League Island, Pa.....		July 7
			Fourteen Foot Bank Light-House.....	July 7	July 8
			Delaware Breakwater, Del.....	July 8	July 9
			Do.....	July 9	July 10

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited	Date of arrival.	Date of departure.
Princeton, Commander C. H. WEST commanding—Continued			Resolute, Commander J. G. EATON commanding—Continued		
	1898.	1899.		1898.	1899.
Washington D. C.	July 12	July 21	Santiago de Cuba	July 3	July 3
Piney Point, Md.	July 21	July 22	Guantanamo Bay, Cuba	July 4	July 9
Key West, Fla.	July 27	July 31	Charleston, S. C.	July 12	July 12
San Miguel, Yucatan	Aug. 2	Aug. 3	Newport News, Va.	July 14	July 16
Majeres Island, Yucatan	Aug. 3	Do.	Tompkinsville, N. Y.	July 17	July 18
Port Livingston, Guatemala..	Aug. 5	Aug. 7	New York, N. Y.	July 18	July 18
Bahia, British Honduras....	Aug. 7	Aug. 8	Guantanamo Bay, Cuba	July 24	July 25
Progreso, Yucatan	Aug. 11	Aug. 11	Santiago de Cuba	July 25	July 26
Key West, Fla.	Aug. 14	Aug. 21	Guantanamo Bay, Cuba	July 28	Aug. 9
Dry Tortugas, Fla.	Aug. 21	Aug. 27	Manzanillo, Cuba.....	Aug. 12	Aug. 14
Port Tampa, Fla.	Aug. 28	Sept. 21	Guantanamo Bay, Cuba	Aug. 15	Aug. 18
Panama, Fla.	Sept. 22	Sept. 24	Fort Pond Bay, New York	Aug. 23	Aug. 24
Port Tampa, Fla.	Sept. 28		Portsmouth, N. H.	Aug. 25	Aug. 27
Porter, Capt. P. F. HARRINGTON commanding. Relieved by Capt. FRANK ROBERTS, June 18, 1898. Relieved by Commander C. J. TRACY, Sept. 30, 1898.			Tompkinsville, N. Y.	Aug. 28	Aug. 29
	1897.	1897.	Cob Dock, Brooklyn, N. Y.	Aug. 29	Sept. 5
Navy yard, New York.....	July 25	July 26	Havana, Cuba.....	Sept. 10	Sept. 24
Tompkinsville, N. Y.	July 26	July 28	Key West, Fla.	Sept. 25	Sept. 26
Gravesend Bay	July 29	Aug. 8	Havana, Cuba.....	Sept. 27	Sept. 29
Tompkinsville, N. Y.	Aug. 9	Aug. 10	Nuevitas, Cuba	Oct. 1	
Newport, R. I.	Aug. 11	Aug. 18	Restless, Lieut. A. W. DODD, commanding. Relieved by Lieut. A. H. DAY, July 23, 1898.		
Portsmouth, N. H.	Aug. 16	Aug. 23	[Commissioned May 14, 1898. Out of commission Sept. 1, 1898.]		
Portland, Me.	Aug. 24	Aug. 29		1898.	1899.
Bar Harbor, Me.	Aug. 30	Aug. 30	New York, N. Y.	July 28	July 28
Portland, Me.	Sept. 3	Sept. 5	Gravesend Bay	July 29	July 29
Off Cape Charles, Virginia....	Sept. 5	Sept. 6	Port Liberty, N. J.	do.	Do.
Off Cape Charles, Virginia ..	Sept. 7	Sept. 7	New York, N. Y.	do.	July 30
Lena Haven Bay, Virginia	Sept. 12	Sept. 12	South Norwalk, Conn.	July 30	Do.
Hampton Roads, Virginia ..	Sept. 27	Sept. 27	New York, N. Y.	do.	Aug. 1
Yorktown, Va.	Oct. 4	Oct. 4	New London, Conn.....	Aug. 1	Aug. 3
Navy yard, New York.....	Oct. 6	Dec. 8	Niantic, Conn.	Aug. 2	Do.
			New London Conn.	do.	Aug. 3
Navy yard, Norfolk, Va. Dec. 11 Mar. 23			Fishers Island, New York..	Aug. 3	Aug. 4
			New London, Conn.....	Aug. 4	Aug. 5
	1898.		Gardiners Bay, New York....	Aug. 5	Aug. 6
Newport News, Va.	Mar. 23	Mar. 27	Great Peconic Bay, New York	Aug. 6	Aug. 8
Charleston, S. C.	Mar. 30	Apr. 4	Greenport, N. Y.	Aug. 8	Do.
Key West, Fla.	Apr. 9	Apr. 22	Gardiners Bay, New York ..	do.	Aug. 9
Matanzas, Cuba	Apr. 23	Apr. 28	New York, N. Y.	Aug. 9	Aug. 13
Key West, Fla.	Apr. 29	May 20	New London, Conn.	Aug. 13	Aug. 14
Havana, Cuba	May 21	May 23	Fort Pond Bay, New York ..	Aug. 14	Aug. 15
Bahama Channel.....	May 24	May 29	Greenport, N. Y.	Aug. 15	Aug. 16
Piedras, Cuba	May 30	May 31	Fort Pond Bay, New York....	Aug. 16	Aug. 18
Cardenas, Cuba	May 31	June 1	New London, Conn.	Aug. 18	Aug. 19
Key West, Fla.	June 2	June 11	Fort Pond Bay, New York....	Aug. 19	Aug. 23
Off Havana, Cuba	June 11	Do.	New London Cone	Aug. 23	Do.
Key West, Fla.	June 12	July 21	Fort Pond Bay, New York....	do.	Aug. 24
Cape Haitien, Haiti	July 25	July 28	New London Conn.	Aug. 24	Do.
Cape San Juan, Porto Rico ..	Aug. 1	Aug. 5	Black Rock Harbor, Connecticut	do.	Aug. 25
Ponce, Porto Rico.....	Aug. 9	Aug. 20	New York, N. Y.	Aug. 25	
Guantanamo, Porto Rico	Aug. 20	Aug. 31	Rodgers, Lieut. J. L. JAYNE, commanding.		
Mole St. Nicholas, Haiti	Sept. 3	Sept. 5	[Commissioned Apr. 2, 1898.]		
Charleston, S. C.	Sept. 10	Sept. 19	Norfolk, Va. (navy yard)	Apr. 2	Apr. 17
Hampton Roads, Virginia	Sept. 21	Sept. 26	Lynn Haven Bay, Virginia....	Apr. 17	Apr. 18
Norfolk, Va.	Sept. 28		Norfolk, Va. (navy yard)....	Apr. 18	Apr. 21
Resolute, Commander J. G. EATON, commanding.			Lynn Haven Bay, Virginia....	Apr. 21	Apr. 23
[Commissioned Apr. 25, 1898.]	1898.	1898.	Norfolk, Va. (navy yard)	Apr. 25	Apr. 29
New York, N. Y.	May 25	May 29	Charleston, S. C.	May 2	May 6
Newport, R. I.	May 27	May 29	Savannah River, Georgia....	May 6	May 7
Norfolk, Va.	May 30	June 1	Key West, Fla.	May 9	May 21
St. Nicholas Mole, Haiti.....	June 4	June 4	Do.	June 4	June 15
Santiago de Cuba	June 5	June 5	Guantanamo Bay, Cuba	June 20	June 20
Key West, Fla.	June 8	June 11	Off Santiago de Cuba	do.	June 31
Tampa, Fla.	June 12	June 16	Guantanamo Bay, Cuba	June 21	June 22
Key West, Fla.	June 17	June 17	Off Santiago de Cuba	June 22	June 24
Santiago de Cuba	June 20	June 20	Guantanamo Bay, Cuba	June 23	July 23
Guantanamo Bay, Cuba	do.	July 2	Off Santiago de Cuba.....	July 22	July 24

Movements of vessels—Continued.

Name of vessel and port visited	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Rodgers, Lieut. J. L. JAYNE, commanding—Continued.			Beladja, Commander R. W. WATSON, commanding.		
	1896.	1896.		1896.	1896.
Guantanamo Bay, Cuba.....	July 24	Aug. 14	[Commissioned May 21, 1896.]		
Key West, Fla.....	Aug. 10	Aug. 18	New York, N. Y.....	June 2	June 3
Charleston, S. C.....	Aug. 20	Aug. 25	Lambert Point, Virginia.....	June 12	June 6
Hampton Roads, Virginia.....	Aug. 26	Aug. 30	Mole St. Nicholas, Haiti.....	June 13	June 12
New York (navy-yard).....	Aug. 31		Guantanamo, Cuba.....	June 13	June 20
			Lambert Point, Virginia.....	July 1	July 6
San Francisco, Capt. M. L. JOHNSON, commanding.			Norfolk, Va. (navy-yard).....	July 6	July 19
			Hampton Roads, Virginia.....	July 19	Sept. 1
Relieved by Capt. R. P. LEARY, Sept. 30, 1896.			Norfolk, Va. (navy yard).....	Sept. 3	Sept. 26
	1897.	1897.	Lambert Point, Virginia.....	Sept. 26	Sept. 29
Katakolon, Greece.....	July 1	July 2	Hampton Roads, Virginia.....	Sept. 29	
Tangier, Morocco.....	July 8	July 14			
Gibraltar, Spain.....	July 14	July 16	Scorpion, Lieut. Commander A. MANIX, commanding.		
Copenhagen, Denmark.....	July 24	Aug. 2	Relieved by Lieut. Commander W. H. TURNER, Oct. 3, 1896.		
Cuxhaven, Germany.....	Aug. 4	Aug. 5			
Flushing, Holland.....	Aug. 6	Aug. 7	[Commissioned Apr. 11, 1896.]	1896.	1896.
Antwerp, Belgium.....	Aug. 7	Aug. 26	Norfolk, Va.....		May 1
Havre, France.....	Aug. 27	Sept. 9	Hampton Roads, Virginia.....	May 1	May 13
Southampton, England.....	Sept. 6	Sept. 11	Key West, Fla.....	May 18	May 19
Lisbon, Portugal.....	Sept. 15	Sept. 20	Cienfuegos, Cuba.....	May 22	May 22
Tangier, Morocco.....	Sept. 21	Sept. 23	Santiago de Cuba.....	May 24	May 24
Gibraltar, Spain.....	Sept. 23	Sept. 25	Cienfuegos, Cuba.....	May 25	May 26
Algiers, Algeria.....	Sept. 27	Sept. 30	Key West, Fla.....	May 28	June 7
Tunis, Tunis.....	Oct. 3	Oct. 8	Off Santiago de Cuba.....	June 10	June 22
Venice, Italy.....	Oct. 7	Oct. 18	Buquiri, Cuba.....	June 22	June 23
Mersin, Turkey.....	Oct. 24	Oct. 26	Off Santiago de Cuba.....	June 23	June 26
Karadash Burnu.....	Oct. 26	Oct. 27	Cape Cruz, Cuba.....	June 24	June 26
Smyrna, Turkey.....	Oct. 30	Dec. 13	Off Manzanillo, Cuba.....	July 1	July 5
Naples, Italy.....	Dec. 16	Dec. 21	Off Guantanamo, Cuba.....	July 6	July 11
Genoa, Italy.....	Dec. 23	Dec. 23	Off Manzanillo, Cuba.....	July 11	Aug. 1
		1896.	Guantanamo Bay, Cuba.....	Aug. 2	
Villefranche, France.....	Dec. 24	Jan. 31			
	1896.		Seminole, Lieut. JAMES H. DILLAWAY, commanding.		
Genoa, Italy.....	Feb. 1	Feb. 6			
Lisbon, Portugal.....	Feb. 12	Mar. 15	[Commissioned July 23, 1896.		
Gravesend, England.....	Mar. 18	Mar. 27	Out of commission Sept. 6, 1896.]	1896.	1896.
Hullfax, Nova Scotia.....	Apr. 11	Apr. 12	Gloucester, Mass.....	Aug. 16	Aug. 20
Tompkinsville, N. Y.....	Apr. 14	Apr. 19	Portland, Me.....	Aug. 17	Aug. 20
New York (navy-yard).....	Apr. 19	Apr. 30	Boston, Mass.....	Aug. 21	Aug. 26
Provincetown, Mass.....	May 2	May 3	Provincetown, Mass.....	Aug. 26	Do.
Do.....	May 3	May 3	Vineyard Haven, Mass.....	Aug. 27	Aug. 29
Do.....	May 4	May 4	New London, Conn.....	Aug. 29	Aug. 29
Do.....	May 5	May 5	Tompkinsville, N. Y.....	Aug. 31	Sept. 1
Do.....	May 6	May 6	Boston, Mass.....	Sept. 1	
Do.....	May 7	May 9			
Do.....	May 10	May 10	Siren, Lieut. J. M. ROBINSON, commanding.		
Do.....	May 11	May 11			
Boston, Mass.....	May 12	May 14	[Commissioned June 24, 1896.		
Provincetown, Mass.....	May 15	May 16	Out of commission Sept. 24, 1896.]	1896.	1896.
Do.....	May 17	May 17	New York, N. Y.....	July 10	July 10
Do.....	May 18	May 18	Tompkinsville, N. Y.....	July 10	July 11
Do.....	May 19	May 19	Norfolk, Va.....	July 13	July 19
Do.....	May 20	May 20	Key West, Fla.....	July 25	July 31
Do.....	May 21	May 21	Off Havana, Cuba.....	July 31	Do.
Do.....	May 22	May 22	Blockade.....	do.	Aug. 6
Do.....	May 23	May 25	Sagua la Grande, Cuba.....	Aug. 8	Aug. 12
Do.....	May 26	May 26	Key West, Fla.....	Aug. 13	Aug. 19
Boston, Mass.....	do.	May 27	Hampton Roads, Virginia.....	Aug. 24	Sept. 1
Provincetown, Mass.....	May 28	May 28	Norfolk, Va.....	Sept. 6	
Do.....	do.	May 29			
Do.....	May 29	May 30	Solace, Commander A. DUNLAP, commanding.		
Do.....	May 31	May 31		1896.	1896.
Boston, Mass.....	June 1	June 2	Newport News, Va.....		Apr. 25
Provincetown, Mass.....	June 2	June 3	Norfolk, Va.....	Apr. 26	May 7
Boston, Mass.....	June 3	June 7	Key West, Fla.....	May 11	May 11
Provincetown, Mass.....	June 9	June 10	Off Haiti with squadron;		
Do.....	June 11	June 11	north coast of Cuba.....	May 14	May 15
Do.....	June 12	June 12	Key West, Fla.....	May 19	June 1
Off Cape Cod, Massachusetts	June 13	June 13	New York, N. Y.....	June 6	June 8
Provincetown, Mass.....	June 14	June 16	Santiago de Cuba.....	June 12	June 12
Boston, Mass.....	June 18	June 23			
Provincetown, Mass.....	June 23	June 24			
Do.....	June 25	June 26			

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Salace, Commander A. DUNLAP, commanding—Cont'd.			Stranger, Lieut. G. L. DYER, commanding—Continued.		
	1896.	1896.		1896.	1896.
Guantanamo Bay	June 13	June 14	Key West, Fla.	Aug. 14	Aug. 17
Santiago de Cuba	June 14	June 15	Hampton Roads, Virginia	Aug. 21	Aug. 24
Guantanamo Bay	June 15	July 3	Newport News, Va.	Aug. 24	Aug. 26
Santiago de Cuba	July 4	July 5	Hampton Roads, Virginia	Aug. 28	Do.
Guantanamo Bay	July 5	July 10	Norfolk, Va.	do	Aug. 27
Alvarado, Cuba	July 10	Do.	Hampton Roads, Virginia	Aug. 27	Sept. 13
Guantanamo Bay	July 11	July 12	Newport News, Va.	Sept. 13	Sept. 17
Norfolk, Va.	July 16	July 16	Norfolk, Va.	Sept. 17	
New York, N. Y.	July 17	Aug. 2			
Key West, Fla.	Aug. 6	Aug. 8	Sawnee, Lieut. Commander D. DELEHANTY, commanding.		
Off Havana, Cuba	Aug. 6	Aug. 9			
Guantanamo Bay	Aug. 12	Aug. 24	[Transferred to Navy Department Mar. 24, 1898. Returned to Treasury Department Aug. 11, 1898.]		
Boston, Mass.	Aug. 20	Sept. 14		1896.	1896.
New York, N. Y.	Sept. 15	Sept. 22	Jacksonville, Fla.	May 12	May 18
Gibara, Cuba	Sept. 27	Sept. 27	Key West, Fla.	May 14	May 30
Guantanamo Bay, Cuba	Sept. 28	Sept. 28	Guantanamo Bay, Cuba ..	June 15	June 19
Port Antonio, Jamaica	Sept. 29	Sept. 29	Do	July 2	July 3
Ponce, Porto Rico	Oct. 1	Oct. 1	Do	July 15	July 18
San Juan, Porto Rico	Oct. 2	Oct. 3	Santiago de Cuba	July 18	July 20
New York, N. Y.	Oct. 8		Guantanamo, Cuba	July 20	July 22
			Santiago de Cuba	July 22	July 28
			Manzanillo, Cuba		
Seabury, Commander WALTER GOODWIN, commanding.					
[Commissioned May 2, 1896.]			Sylph, Lieut. W. J. MAXWELL, commanding.		
	1896.	1896.			
Boston, Mass. (navy yard) ..	May 2	June 6	[Commissioned Aug. 18, 1896.]		
Lambert Point, Virginia ..	June 9	June 11		1896.	1896.
Norfolk, Va. (navy yard) ..	June 11	June 18	League Island, Pa.		Aug. 28
Provincetown, Mass.	June 21	June 26	Marshall's Point, Maryland ..	Aug. 28	Aug. 29
Key West, Fla.	July 3	July 9	Washington, D. C.	Aug. 29	Do.
Guantanamo Bay, Cuba	July 14	July 25	Alexandria, Va.	do	Do.
Cape Hatteras, Haiti	July 25	July 30	Washington, D. C.	do	Sept. 1
Lambert Point, Virginia	Aug. 4	Aug. 8	Mount Vernon, Virginia	Sept. 1	Do.
Norfolk, Va. (navy yard) ..	Aug. 6	Sept. 11	Washington, D. C.	do	Sept. 3
Hampton Roads, Virginia ..	Sept. 11	Sept. 12	Hampton Roads, Virginia	Sept. 4	Sept. 4
Key West, Fla.	Sept. 17		Washington, D. C.	Sept. 5	Sept. 28
			Mount Vernon, Virginia	Sept. 28	Do.
			Washington, D. C.	do	
Stirling, Commander R. E. LIPPY, commanding.			Sylvia, Lieut. GEO. H. PETERS, commanding.		
[Commissioned Apr. 16, 1896.]					
	1896.	1896.	[Commissioned June 29, 1896. Out of commission Sept. 16, 1896.]		
New York, N. Y.	Apr. 16	Apr. 29		1897.	1897.
Tompkinsville, N. Y.	Apr. 29	Apr. 30	New York, N. Y.		July 21
Hampton Roads, Virginia ..	May 1	May 2	Chesapeake Bay	July 23	July 24
Lambert Point, Virginia ..	May 2	May 4	Lambert Point, Virginia	July 24	July 25
Hampton Roads, Virginia ..	May 4	May 13	Navy yard Norfolk, Va.	July 25	July 26
Charleston, S. C.	May 10	May 16	Key West, Fla.	Aug. 2	Aug. 9
Key West, Fla.	May 19	May 24	Off Havana, Cuba	Aug. 10	Aug. 13
Pinar del Rio, Cuba	May 26	May 26	Key West, Fla.	Aug. 13	Aug. 17
Do	May 27	May 27	Charleston, S. C.	Aug. 20	Aug. 23
Off Santiago de Cuba	May 30	June 4	Chesapeake Bay	Aug. 25	Aug. 26
Guantanamo Bay, Cuba	June 8	June 27	Hampton Roads, Virginia ..	Aug. 26	Sept. 10
Hampton Roads, Virginia ..	July 2	July 5	Norfolk, Va. (navy yard) ..	Sept. 10	
Norfolk, Va.	July 5	Aug. 4			
Lambert Point, Virginia	Aug. 4	Aug. 5	Tacoma, Lieut. J. S. WATERS, commanding.		
Hampton Roads, Virginia ..	Aug. 5	Do.			
Ponce, Porto Rico	Aug. 13	Aug. 20	[Commissioned July 18, 1896. Out of commission Sept. 3, 1896.]		
Guantanamo Bay, Cuba	Aug. 24	Aug. 27		1896.	1896.
Hampton Roads, Virginia ..	Sept. 12	Sept. 17	Pensacola, Fla.		July 29
Lambert Point, Virginia ..	Sept. 17	Sept. 22	Key West, Fla.	July 31	Aug. 4
Hampton Roads, Virginia ..	Sept. 22	Sept. 23	Pensacola, Fla.	Aug. 7	Aug. 16
Tompkinsville, N. Y.	Sept. 25		New Orleans, La.	Aug. 18	Aug. 20
			Pensacola, Fla.	Aug. 28	
Stranger, Lieut. G. L. DYER, commanding.			Talbot, Lieut. W. R. SHORMAKER, commanding.		
[Commissioned June 20, 1896. Out of commission Sept. 24, 1896.]					
	1896.	1896.	[Commissioned Apr. 4, 1896.]		
New York, N. Y.	July 10	July 10		1896.	1896.
Tompkinsville, N. Y.	July 10	July 11	Newport, R. I.		June 24
Newport News, Va.	July 12	July 12	New York, N. Y.	June 15	June 20
Norfolk, Va.	do	July 16			
Key West, Fla.	July 21	July 24			
Off Havana, Cuba	July 24	Aug. 4			
Key West, Fla.	Aug. 4	Aug. 10			
Sagua la Grande, Cuba	Aug. 11	Aug. 12			
Off Havana, Cuba	Aug. 13	Aug. 13			

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Texas, Capt. W. C. WING, commanding, etc.—Continued.			Urcas, Lieut. F. R. BRAINARD, commanding—Continued.		
Off Guantanamo, Cuba.....	1896. June 15	1896. June 15	Key West Fla.....	1896. Aug. 10	1896. Aug. 17
Off Santiago de Cuba.....	do June 23	June 23	Hampton Roads, Virginia.....	Aug. 22	Aug. 25
Off Guantanamo, Cuba.....	June 23	Do.	New York (navy yard).....	Aug. 25	Aug. 27
Off Santiago de Cuba.....	do	June 29	Newport, R. I.....	Aug. 28	
Off Guantanamo, Cuba.....	June 29	Do.			
Off Santiago de Cuba.....	do	June 30	Vesuvius, Lieut. Commander		
Off Guantanamo, Cuba.....	June 30	Do.	J. E. PILLSBURY, commanding.		
Off Santiago de Cuba.....	do	July 12	Off St. Johns River Bar, Flor-	1897.	1897.
Rio Tarquino, Cuba.....	July 12	July 13	ida.....		July 25
Santiago de Cuba.....	July 13	Do.	Mayport, Fla.....	July 26	July 27
Guantanamo, Cuba.....	do	July 25	Boston, Mass.....	Aug. 1	Oct. 10
New York (navy-yard).....	July 31	Aug. 12	Tybee Roads, Georgia.....	Oct. 13	Oct. 14
Tompkinsville, N. Y.....	Aug. 19	Sept. 8	Jacksonville, Fla.....	Oct. 15	Oct. 17
Navy yard, New York.....	Sept. 8				
Topeka, Lieut. J. J. KNAPP,			Off St. Johns River Bar.....	Dec. 19	1898. Jan. 5
commanding. Relieved by					
Commander W. S. COWLES					
May 4, 1898.					
[Commissioned Apr. 1, 1898.]			Mayport, Fla.....	1898. Mar. 14	Mar. 16
Weymouth, England.....	1898. Apr. 13	1898. Apr. 9	Washington, D. C.....	Mar. 19	Apr. 3
Falmouth, England.....	Apr. 13	Apr. 19	Norfolk, Va.....	Apr. 4	Apr. 12
Tompkinsville, N. Y.....	May 1	May 3	Newport, R. I.....	Apr. 13	Apr. 25
New York (navy-yard).....	May 2	June 30	Norfolk, Va.....	Apr. 29	May 7
Key West, Fla.....	July 5	July 10	Key West, Fla.....	May 13	May 16
Off Havana, Cuba.....	July 11	July 11	Do.....	May 22	May 24
Port Nipe, Cuba.....	July 13	July 21	Do.....	May 28	June 9
Key West, Fla.....	July 13	July 28	Off Santiago de Cuba.....	June 13	
Off Havana, Cuba.....	July 28	Aug. 5	Do.....	June 30	July 19
Key West, Fla.....	Aug. 6	Aug. 12	Guantanamo.....	July 19	Aug. 18
Off Havana, Cuba.....	Aug. 13	Aug. 13	Charleston, S. C.....	Aug. 21	Aug. 23
Port Francis, Cuba.....	Aug. 14	Aug. 14	New York, N. Y.....	Aug. 25	Aug. 28
Key West, Fla.....	Aug. 15	Aug. 17	Newport, R. I.....	Aug. 28	Aug. 30
Hampton Roads, Virginia.....	Aug. 20	Aug. 29	Boston, Mass.....	Aug. 31	
Provincetown, Mass.....	Sept. 1	Sept. 2	Vicksburg, Commander A. B.		
Boston, Mass.....	Sept. 12	Sept. 12	H. LILLIE, commanding		
New York (navy-yard).....	Sept. 13		[Commissioned Oct. 23, 1897.]		
Texas, Lieut. F. R. BRAINARD,			Portsmouth, N. H.....	1898.	1898. Jan. 5
commanding.			Newport, R. I.....	Jan. 6	Jan. 16
[Commissioned Apr. 6, 1898.]			St. Thomas, D. W. I.....	Feb. 6	Feb. 11
New York (navy yard).....	1898. Apr. 14	1898. Apr. 14	St. Kitts, West Indies.....	Feb. 16	Mar. 10
Sandy Hook, N. Y.....	Apr. 14	Apr. 15	Martinique, West Indies.....	Mar. 15	Mar. 17
Hampton Roads, Virginia.....	Apr. 17	Apr. 17	St. Thomas, West Indies.....	Mar. 18	Mar. 19
Norfolk, Va.....	do	Apr. 20	Hampton Roads, Virginia.....	Mar. 25	Apr. 1
Port Royal, S. C.....	Apr. 23	Apr. 25	Norfolk, Va.....	Apr. 1	Apr. 26
Key West, Fla.....	Apr. 29	Apr. 30	Key West, Fla.....	May 1	May 4
West coast of Florida.....	Apr. 30	May 3	Off Havana, Cuba.....	May 5	June 9
Tampa, Fla.....	May 3	Do.	Key West, Fla.....	June 10	June 19
West coast of Florida.....	do	May 5	Off Havana, Cuba.....	June 20	July 26
Key West, Fla.....	May 5	May 9	Key West, Fla.....	July 27	Aug. 4
Matanzas, Cuba.....	May 9	May 10	Blockade off Havana.....	Aug. 5	Aug. 13
Key West, Fla.....	May 11	May 15	Cay Piedad, Cuba.....	Aug. 14	Aug. 14
Off Havana, Cuba.....	May 15	Do.	Key West, Fla.....	Aug. 15	Aug. 18
Key West, Fla.....	May 16	May 18	Newport, R. I.....	Aug. 23	Aug. 26
Off Havana, Cuba.....	May 16	May 19	Montauk Point Long Island.....	Aug. 28	Do.
Matanzas, Cuba.....	May 19	May 31	Newport, R. I.....	do	Aug. 29
Off Havana, Cuba.....	May 31	Do.	Portsmouth, N. H.....	Aug. 30	Sept. 14
Key West, Fla.....	June 1	June 10	Newport, R. I.....	Sept. 15	Sept. 21
Off Havana, Cuba.....	June 12	June 13	Navy-yard, Norfolk, Va.....	Sept. 23	
Off Cardenas, Cuba.....	June 13	June 14			
Matanzas, Cuba.....	June 14	Do.	Viking, Lieut. H. MURK,		
Off Havana, Cuba.....	do	June 19	commanding. Relieved		
Matanzas, Cuba.....	June 19	June 24	by Lieut. Commander J. C.		
Off Havana, Cuba.....	June 25	June 25	WILSON July 4, 1898.		
Key West, Fla.....	do	July 3	[Commissioned May 11, 1898.		
Off Havana, Cuba.....	July 4	July 4	Out of commission Sept. 22,		
Off Matanzas and Cardenas,			1898.]		
Cuba.....	July 5	July 14	1898.	1898.	
Key West, Fla.....	July 15	July 19	New York, N. Y.....		July 12
North coast Cuba, cruising..	July 19	July 23	Port Royal, S. C.....	July 18	July 19
Off Cardenas, Cuba.....	July 23	Do.	Key West, Fla.....	July 21	July 27
Key West, Fla.....	July 24	July 26	Blockade.....	July 28	Aug. 16
Off Havana, Cuba.....	July 27	July 27	Key West, Fla.....	Aug. 16	Aug. 17
Off Cardenas, Cuba.....	do	July 30	Port Royal, S. C.....	Aug. 20	Aug. 22
Off Matanzas, Cuba.....	July 30	Aug. 10	Hampton Roads, Virginia.....	Aug. 25	Aug. 30
			Norfolk, Va.....	Aug. 30	Sept. 4

Movements of vessels—Continued.

Name of vessel and port visited	Date of arrival	Date of departure	Name of vessel and port visited	Date of arrival	Date of departure
Viking, Lieut. H. MINETT, commanding, etc.—Cont'd.	1898.	1898.	Wheeling, Commander U. S. BREKE, commanding—Cont'd.	1898.	1898.
Hampton Roads, Virginia...	Sept. 4	Sept. 8	Comox, British Columbia...	Jan. 8	Jan. 9
Annapolis, Md.	Sept. 8	Sept. 10	Duncan Bay, British Columbia...	Jan. 9	Jan. 10
Norfolk, Va.	Sept. 10	Sept. 11	Alert Bay, British Columbia...	Jan. 10	Jan. 11
Hampton Roads, Virginia...	Sept. 11	Sept. 17	McLaughlin Bay, British Columbia...	Jan. 11	Jan. 12
Norfolk, Va.	Sept. 17		Coghlan Anchorage, British Columbia...	Jan. 12	Jan. 13
Waban, Lieut. (Junior Grade) J. D. ANKING, commanding.			Port Simpson, British Columbia...	Jan. 13	Jan. 14
[Commissioned July 28, 1898. Out of commission Aug. 29, 1898.]	1898.	1898.	Mary Island, Alaska...	Jan. 14	Do.
Charleston, S. C.	July 28	July 28	Metlakahita, Alaska...	do	Jan. 15
Key West, Fla.	Aug. 3	Aug. 18	Kitchikan, Alaska...	Jan. 15	Do.
Port Royal, S. C.	Aug. 21		Kasaan, Alaska...	do	Do.
Wasp, Lieut. AARON WARD, commanding.			Karta Bay, Alaska...	do	Jan. 16
[Commissioned Apr. 11, 1898. Out of commission Sept. 27, 1898.]	1898.	1898.	Wrangell, Alaska...	Jan. 16	Jan. 17
New York, N. Y.	Apr. 26	Apr. 26	Finger Point, Alaska...	Jan. 17	Jan. 18
Key West, Fla.	May 1	May 7	Sumdum, Alaska...	Jan. 18	Jan. 19
Off Havana, Cuba...	May 7	Do.	Juncos, Alaska...	Jan. 19	Jan. 20
Marble to Bahia Honda, Cuba...	do	May 15	Endicott River, Alaska...	Jan. 20	Jan. 21
Key West, Fla.	May 15	May 19	Pyramid Harbor, Alaska...	Jan. 21	Do.
Sand Key, Fla.	May 19	May 21	Portage Cove...	do	Jan. 22
Key West, Fla.	May 21	May 23	Dyes, Alaska...	Jan. 22	Do.
Old Bahama Channel...	May 24	May 27	Skagway, Alaska...	do	Do.
Cienfuegos, Cuba...	May 29	May 29	Portage Cove...	do	Jan. 23
Key West, Fla.	May 31	June 9	William Henry Bay, Alaska...	Jan. 23	Jan. 24
Off Havana, Cuba...	June 9	June 11	Funter Bay, Alaska...	Jan. 24	Do.
Key West, Fla.	June 12	June 15	Killisnoo, Alaska...	do	Jan. 25
Dry Tortugas, Fla.	June 15	June 16	Sitka, Alaska...	Jan. 25	Feb. 9
Santiago de Cuba...	June 20	June 22	Killisnoo, Alaska...	Feb. 9	Feb. 19
Baquiri, Cuba...	June 22	June 23	Portage Cove...	Feb. 10	Feb. 11
Santiago de Cuba...	June 23	Do.	Skagway, Alaska...	Feb. 11	Do.
Guantanamo Bay, Cuba...	do	June 28	Dyes, Alaska...	do	Feb. 12
Key West, Fla.	July 1	July 6	Skagway, Alaska...	Feb. 13	Do.
Siboney, Cuba...	July 10	July 10	Funter Bay, Alaska...	do	Feb. 14
Guantanamo Bay, Cuba...	do	July 19	Hoonah, Alaska...	Feb. 14	Feb. 15
Nipo Bay, Cuba...	July 21	July 23	Yakutat, Alaska...	Feb. 15	Feb. 17
Fajardo, Porto Rico...	July 23	July 23	Hoonah, Alaska...	Feb. 18	Feb. 19
Guinea, Porto Rico...	July 27	July 27	Killisnoo, Alaska...	Feb. 19	Feb. 20
Ponce, Porto Rico...	do	Aug. 1	Sitka, Alaska...	Feb. 20	Mar. 27
Arroyo, Porto Rico...	Aug. 1	Do.	Port Angeles, Wash.	Mar. 20	Mar. 31
Ponce, Porto Rico...	do	Aug. 16	Seattle, Wash.	Mar. 31	Apr. 6
Mayaguez, Porto Rico...	Aug. 15	Aug. 17	Comox, British Columbia...	Apr. 6	Apr. 6
Ponce, Porto Rico...	Aug. 17	Aug. 20	Alert Bay, British Columbia...	Apr. 6	Apr. 7
Guinea, Porto Rico...	Aug. 20	Aug. 29	Swanson Bay, British Columbia...	Apr. 7	Apr. 8
San Juan, Porto Rico...	Aug. 30	Sept. 8	Ward Cove, Alaska...	Apr. 8	Apr. 9
Charleston, S. C.	Sept. 13	Sept. 18	Wrangell...	Apr. 9	Do.
Hampton Roads, Virginia...	Sept. 20	Sept. 21	Wrangell Strait...	do	Apr. 10
Norfolk, Va. (navy yard)...	Sept. 21		Portage Cove...	Apr. 10	Apr. 11
Wheeling, Commander U. S. BREKE, commanding.			Skagway, Alaska...	Apr. 11	Do.
[Commissioned Aug. 10, 1897.]	1897.	1897.	Dyes, Alaska...	do	Apr. 12
Mare Island, Cal.	Sept. 18	Sept. 18	Pahlof Harbor, Alaska...	Apr. 12	Apr. 13
San Quentin, Cal.	Sept. 19	Sept. 19	Sitka, Alaska...	Apr. 13	Apr. 14
San Francisco, Cal.	Sept. 19	Sept. 23	Yakutat, Alaska...	Apr. 13	Apr. 14
Do	Sept. 23	Sept. 24	Port Etches, Alaska...	Apr. 14	Apr. 15
Honolulu, Hawaiian Islands...	Oct. 3	Oct. 19	Coal Bay, Alaska...	Apr. 15	Apr. 16
Lahaina, Hawaiian Islands...	Oct. 19	Do.	Tyonek, Alaska...	Apr. 16	Apr. 17
Do	do	Oct. 22	Sitka, Alaska...	May 1	May 1
Honolulu, Hawaiian Islands...	Oct. 22	Nov. 6	Ratz Harbor...	May 4	May 5
San Francisco, Cal.	Nov. 16	Nov. 23	Klewnuggit Inlet, Alaska...	May 5	May 6
Sausalito, Cal.	Nov. 25	Nov. 27	McLaughlin Bay, British Columbia...	May 6	Do.
Mare Island, Cal.	Nov. 27	Dec. 29	Seattle, Wash.	May 8	May 9
San Quentin, Cal.	Dec. 29	Dec. 30	Bremerton, Wash.	May 23	May 24
Do	Dec. 30	Do.	Seattle, Wash.	May 24	June 1
Requima, British Columbia.	1898.	1898.	Bremerton, Wash.	June 7	Do.
Jan. 4	Jan. 8	Jan. 1	Seattle, Wash.	do	June 1
			Port Townsend, Wash.	June 9	June 10
			Safety Cove, British Columbia...	June 11	June 12
			Sitka, Alaska...	June 14	June 15
			Dutch Harbor, Unalaska...	June 23	June 24
			St. Michael, Alaska...	June 29	July 1
			St. Paul, Pribilof Islands...	July 8	July 9
			Do	do	July 9
			Village Cove, St. Paul...	July 9	Do.
			St. George Village, Pribilof Islands...	do	Do.

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Wheeling, Commander U. S. Saxe, commanding—Cont'd.	1898.	1898.	Wilmington, Commander C. C. Todd, commanding—Continued.	1898.	1898.
Dutch Harbor, Unalaska.....	July 10	July 11	Off Havana, Cuba.....	May 4	May 5
Do.....	July 11	July 18	Key West, Fla.....	May 6	May 6
Village Cove, St. Paul.....	July 19	July 20	Off Havana, Cuba.....	May 7	May 7
St. George Village, Pribilof Islands.....	July 20	Do.	Key West, Fla.....	do	May 9
Dutch Harbor, Unalaska.....	July 21	July 23	Cay Franca, Cuba.....	May 10	May 10
St. Paul, Kodiak Island.....	July 25	July 29	Off Cardenas, Cuba.....	May 11	May 11
Uyak, Kodiak Island.....	July 29	July 30	Cay Franca, Cuba.....	May 15	May 15
Kariak, Kodiak Island.....	July 30	July 31	Key West, Fla.....	May 17	May 17
Lary Bay, Kodiak Island.....	July 31	Aug. 1	Off Havana, Cuba.....	May 18	May 18
Anchor Bay.....	Aug. 2	Aug. 3	Off Cardenas, Cuba.....	do	do
Castle Bay.....	Aug. 3	Do.	Off Matanzas, Cuba.....	do	May 19
Delarof Harbor, Unga Island.....	Aug. 4	Aug. 4	Off Havana, Cuba.....	May 19	do
Sand Point, Popof Island.....	do	Aug. 5	Off Matanzas, Cuba.....	do	do
Gales Island.....	Aug. 5	Do.	Off Havana, Cuba.....	May 20	May 23
Dutch Harbor, Unalaska.....	Aug. 6	Aug. 11	Off Cardenas, Cuba.....	May 23	do
Akutan Harbor.....	Aug. 11	Aug. 12	Nicholas and Bahama Channels.....	do	May 26
Akus Cove.....	Aug. 13	Aug. 13	Key West, Fla.....	May 26	June 8
Do.....	do	Aug. 14	Off Havana, Cuba.....	June 8	June 26
Akutan Harbor.....	Aug. 14	Do.	Key West, Fla.....	June 27	July 5
Dutch Harbor.....	do	Aug. 20	Guantanamo, Cuba.....	July 8	July 9
St. George Village.....	Aug. 21	Aug. 23	Siboney, Cuba.....	July 9	July 12
Village Cove, St. Paul.....	Aug. 23	do	Guantanamo, Cuba.....	July 12	July 13
Dutch Harbor, Unalaska.....	Aug. 24	Aug. 27	Off Santiago de Cuba.....	July 13	do
Akus Cove.....	Aug. 29	Aug. 29	Cape Cruz, Cuba.....	July 14	July 14
Do.....	do	Do.	Cuatro Reales Channel, Cuba.....	do	July 16
Do.....	do	Aug. 31	Santa Cruz del Sur, Cuba.....	July 16	do
Deer Island.....	Aug. 31	Sept. 1	Cuatro Reales Channel, Cuba.....	do	July 17
Popof Str., Unga Island.....	Sept. 1	Sept. 2	Guayabal, Cuba.....	July 17	July 18
Kariak, Kodiak Island.....	Sept. 3	Sept. 3	Manzanillo, Cuba.....	July 18	July 19
St. Paul, Kodiak Island.....	do	Sept. 4	Guayabal, Cuba.....	July 19	July 20
Port Eichen.....	Sept. 5	Sept. 6	Santa Cruz del Sur, Cuba.....	July 20	do
Port Valdes Inlet.....	Sept. 6	Sept. 7	Jucaro, Cuba.....	July 21	July 22
Gravina Point.....	Sept. 7	Sept. 8	Tonas, Cuba.....	July 22	do
Uyak.....	Sept. 8	Sept. 10	Jucaro, Cuba.....	July 23	July 23
Uyak, Kodiak Island.....	Sept. 11	Sept. 11	Pingue Pass, Cuba.....	do	July 24
Kariak, Kodiak Island.....	do	Sept. 12	Santa Cruz del Sur, Cuba.....	July 24	do
Sand Point, Popof Island.....	Sept. 13	Sept. 14	Guayabal, Cuba.....	do	July 25
Belkofski.....	Sept. 14	Do.	Cuatro Reales Channel, Cuba.....	July 25	July 26
Akutan Bay.....	do	Sept. 15	Cienfuegos, Cuba.....	July 29	Aug. 2
Dutch Harbor.....	Sept. 15	Sept. 19	Isla of Pines, Cuba.....	Aug. 3	Aug. 3
St. Michael.....	Sept. 23	Sept. 23	Key West, Fla.....	Aug. 4	Aug. 6
Do.....	Sept. 23	Sept. 26	Isla of Pines, Cuba.....	Aug. 8	Aug. 8
Dutch Harbor, Unalaska.....	Sept. 26	Oct. 1	Cienfuegos, Cuba.....	Aug. 9	Aug. 13
Wilmington, Commander C. C. Todd, commanding.			Isla of Pines, Cuba.....	Aug. 14	Aug. 17
[Commissioned May 13, 1897.]	1897.	1897.	Key West, Fla.....	Aug. 19	Aug. 19
Serfolk, Va.....	Sept. 12	Nov. 19	Hampton Roads, Virginia.....	Aug. 23	Aug. 29
Wilmington, Del.....	Nov. 23	Nov. 28	Provincetown, Mass.....	Sept. 1	Sept. 2
Annapolis, Md.....	Nov. 30	Dec. 2	Boston, Mass.....	Sept. 2	
Serfolk, Va.....	Dec. 2	Dec. 31			
St. Thomas, West Indies.....	1898.	1898.	Windsor, Capt. S. E. MAGUIRE, R. C. S., commanding.		
Punta a Pitre, Guadeloupe.....	Jan. 12	Jan. 16	[Transferred to Navy Department Mar. 24, 1898. Returned to Treasury Department Aug. 11, 1898.]		
Rose Terra, Guadeloupe.....	Jan. 16	Jan. 17		1898.	1898.
Port Castries, St. Lucia.....	Jan. 18	Jan. 21	Norfolk, Va.....		Apr. 30
Kingstown, St. Vincent.....	Jan. 21	Jan. 23	Key West, Fla.....	May 4	May 6
Port of Spain, Trinidad.....	Jan. 23	Feb. 3	Blockade.....	May 8	May 13
La Brva, Trinidad.....	Feb. 3	Do.	Key West, Fla.....	May 14	May 23
Port of Spain, Trinidad.....	do	Do.	Do.....	May 24	May 25
St. George, Grenada.....	Feb. 4	Feb. 10	Do.....	May 25	May 27
La Guayra, Venezuela.....	Feb. 12	Feb. 27	Off Havana, Cuba.....	May 28	June 16
Bridgetown, Barbados.....	Mar. 3	Mar. 2	Key West, Fla.....	June 17	July 7
Fort de France, Martinique.....	Mar. 3	Mar. 9	Off Havana, Cuba.....	July 8	Aug. 1
Port Castries, St. Lucia.....	Mar. 10	Mar. 10	Key West, Fla.....	Aug. 2	Aug. 9
Bridgetown, Barbados.....	Mar. 11	Mar. 16	Off Havana, Cuba.....		
Port Castries, St. Lucia.....	Mar. 17	Mar. 17			
Port Antonio, Jamaica.....	Mar. 21	Mar. 23	Windsor, Lieut. J. B. BRADDOCK, commanding. Relieved by Lieut. A. P. NISLACK, Aug. 16, 1898.		
Key West, Fla.....	Mar. 26	Mar. 28			
Jacksonville, Fla.....	Mar. 30	Apr. 9			
Key West, Fla.....	Apr. 11	Apr. 22	[Commissioned Sept. 15, 1897.]	1897.	1898.
Off Havana, Cuba.....	Apr. 26	Apr. 28	Norfolk, Va.....	Dec. 29	Jan. 3
Off Matanzas, Cuba.....	do	Do.		1898.	
Off Havana, Cuba.....	do	May 4	Do.....	Jan. 3	Jan.
Off Mariel, Cuba.....	May 4	Do.			

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Winalow, Lieut. J. B. BRADDOCK, commanding, etc—Continued.			Wampatuck, Lieut. C. W. JUNGES, commanding—Continued.		
	1898.	1898.		1898.	1898.
Delaware Breakwater.....	Jan. 7	Jan. 8	Hampton Roads, Virginia....	Aug. 24	Aug. 25
Navy yard, New York.....	Jan. 8	Jan. 13	Navy yard, New York.....	Aug. 25	Sept. 3
Newport, R. I.....	Jan. 14	Jan. 18	Provincetown, Mass.....	Sept. 8	Sept. 4
Do.....	Jan. 18	Jan. 25	Boston, Mass.....	Sept. 4	Sept. 6
Delaware Breakwater.....	Jan. 27	Jan. 30	League Island, Pa.....	Sept. 5	Sept. 13
Norfolk, Va.....	Jan. 30	Mar. 5	Tompkinsville, N. Y.....	Sept. 14	Sept. 15
Charleston, S. C.....	Mar. 7	Mar. 11	Navy yard, New York.....	Sept. 15	
Key West, Fla.....	Mar. 14	Mar. 20			
Do.....	Mar. 20	Mar. 23	Wyandotte, Lieut. J. B. MILTON, commanding. Relieved by Lieut. T. I. MASON, June 22, 1898.		
Do.....	Mar. 23	Mar. 24			
Do.....	Mar. 24	Mar. 26			
Do.....	Mar. 26	Mar. 28			
Do.....	Mar. 28	Mar. 29			
Do.....	Mar. 29	Mar. 31	[Commissioned Apr. 30, 1898. Out of commission Sept. 20, 1898.]		
Do.....	Mar. 31	Apr. 1		1898.	1898.
Do.....	Apr. 2	Apr. 3	New Haven, Conn.....		May 17
Do.....	Apr. 3	Apr. 4	Boston, Mass.....	May 19	Sept. 5
Do.....	Apr. 4	Apr. 7	League Island, Pa.....	Sept. 9	
Do.....	Apr. 7	Apr. 23			
Blockade off Havana.....	Apr. 24	Apr. 24	Tale, Capt. W. C. WISE, commanding.		
Blockade off Matanzas.....	do	Apr. 25			
Key West, Fla.....	Apr. 25	Apr. 27			
Blockade off Havana.....	Apr. 27	Do.			
Blockade off Cardenas.....	Apr. 28	Apr. 28			
Key West, Fla.....	Apr. 29	May 4			
Blockade off Matanzas.....	May 4	Do.		1898.	1898.
Blockade off Cardenas.....	do	May 12	New York, N. Y.....		May 1
Key West, Fla.....	May 12	June 6	Off San Juan, Porto Rico....	May 6	May 12
Do.....	June 8	June 28	St. Thomas, Danish West Indies.....	May 14	May 15
Mobile, Ala.....	July 2	Aug. 2	Off San Juan, Porto Rico....	May 16	May 17
Do.....	Aug. 2	Aug. 4	Cape Haitien, Haiti.....	May 19	May 16
Key West, Fla.....	Aug. 6	Aug. 16	Do.....	May 20	May 21
Port Royal, S. C.....	Aug. 19	Aug. 23	Off Santiago de Cuba.....	May 22	May 23
Hampton Roads, Virginia....	Aug. 24	Aug. 24	Off Port Antonio, Jamaica....	May 28	May 29
Norfolk, Va.....	do	Aug. 26	Newport News, Va.....	June 5	June 23
Navy yard, New York.....	Aug. 27		Off Santiago de Cuba.....	June 27	June 29
			Key West, Fla.....	July 3	July 3
Wampatuck, Lieut. C. W. JUNGES, commanding.			Charleston, S. C.....	July 5	July 8
			Santiago de Cuba.....	July 11	July 17
[Commissioned Apr. 6, 1898.]			Guantanamo, Cuba.....	July 17	July 21
	1898.	1898.	Guanica, Porto Rico.....	July 25	July 26
Navy yard, New York.....	Apr. 6	Apr. 15	New York, N. Y.....	Aug. 1	Aug. 11
Navy yard, Norfolk, Va.....	Apr. 17	Apr. 22	Guantanamo, Cuba.....	Aug. 15	Aug. 16
Naval station, Port Royal....	Apr. 25	Apr. 26	Santiago de Cuba.....	do	Aug. 19
Naval station, Key West....	Apr. 28	Apr. 29	Montauk Point, New York....	Aug. 23	Aug. 26
Havana blockade.....	Apr. 30	May 1	New York, N. Y.....	Aug. 27	
Key West, Fla.....	May 2	May 4			
San Juan, Porto Rico.....	May 12	May 12	Yankee, Commander W. H. BROWN, commanding. Relieved by Lieut. JOHN HUBBARD, Sept. 20, 1898.		
Off Santiago, Cuba.....	May 15	May 18			
Guantanamo Bay, Cuba.....	May 16	May 19			
Mole St. Nicolas, Haiti.....	May 20	May 20			
Havana blockade.....	May 23	May 23			
Key West, Fla.....	May 24	June 9			
Havana blockade.....	June 9	June 11		1898.	1898.
Key West, Fla.....	June 12	June 14	Navy yard, New York.....	Apr. 14	May 11
Rendezvous off Tortugas, Fla	June 15	June 15	Provincetown, Mass.....	May 12	May 12
Off Santiago de Cuba.....	June 19	June 22	Block Island, New York....	May 14	May 14
Baiquiri, Cuba.....	June 22	June 23	Delaware Breakwater, Del..	May 19	May 19
Siboney, Cuba.....	June 23	June 24	Tompkinsville, N. Y.....	May 25	May 26
Playa del Este, Cuba.....	June 24	June 26	Santiago blockade.....	June 3	June 7
Off Santiago de Cuba.....	June 29	June 29	Guantanamo Bay, Cuba.....	June 7	Do.
Cape Cruz blockade.....	June 30	June 30	Santiago blockade.....	do	June 8
Manzanillo, Cuba.....	do	Do.	St. Nicolas Mole, Haiti.....	June 9	June 9
Anchorage west end of Buena Esperanza bank.....	do	July 1	Santiago blockade.....	June 10	June 10
Cape Cruz, Cuba.....	July 1	Do.	Port Antonio, Jamaica....	do	June 11
Playa del Este, Cuba.....	July 2	July 6	Montego Bay, Jamaica.....	June 11	Do.
Cape Cruz, Cuba.....	July 8	July 10	Santiago blockade.....	June 12	June 12
Cay Media Luna, Cuba.....	July 10	July 11	Cienfuegos blockade.....	June 12	June 15
Cape Cruz, Cuba.....	July 11	July 17	Santiago blockade.....	June 16	June 17
Guayabal, Cuba.....	July 17	July 18	Guantanamo Bay, Cuba.....	June 17	June 18
Manzanillo, Cuba.....	July 18	July 19	Cienfuegos blockade.....	June 19	June 24
Playa del Este, Cuba.....	July 20	Aug. 14	Isle of Pines blockade.....	June 25	June 27
Key West, Fla.....	Aug. 16	Aug. 18	Key West Fla.....	June 28	July 2
Lynn Haven Bay, Virginia....	Aug. 23	Aug. 23	Tompkinsville, N. Y.....	July 6	July 12
Hampton Roads, Virginia....	do	Aug. 24	Navy yard, Norfolk, Va.....	July 13	July 17
Lambert Point, Virginia.....	Aug. 24	Do.	Guantanamo Bay, Cuba.....	July 21	July 29
			Do.....	July 29	Aug. 1

Movements of vessels—Continued.

Name of vessel and port visited.	Date of arrival.	Date of departure.	Name of vessel and port visited.	Date of arrival.	Date of departure.
Yankee, Commander W. H. BROWN, commanding, etc.—Continued.	1898.	1898.	Yorktown, Commander C. H. STOCKTON, commanding—Continued.	1898.	1898.
Guantanamo Bay, Cuba	Aug. 3	Aug. 11	Honolulu, Hawaiian Islands	Oct. 16	Nov. 8
Castle Island blockade	Aug. 12	Aug. 14	San Francisco, Cal	Nov. 17	Nov. 18
Guantanamo Bay, Cuba	Aug. 15	Aug. 24	Mare Island, Cal	Nov. 18	
Tompkinsville, N. Y.	Aug. 28	Aug. 30			
League Island, Pa.	Aug. 31	Sept. 3	Yosemite, Commander W. H. EMORY, commanding		
Tompkinsville, N. Y.	Sept. 4	Sept. 18	[Commissioned Apr. 13 1898.]		
League Island, Pa.	Sept. 19			1898.	1898.
Yankee, Lieut. Commander J. D. ADAMS, commanding.			Newport News, Va.		May 17
[Commissioned May 16, 1898.]	1898.	1898.	Hampton Roads, Virginia	May 17	May 30
Norfolk, Va.	May 16	June 18	Key West, Fla.	June 2	June 7
Hampton Roads, Virginia	June 18	June 10	Off Havana, Cuba	June 7	June 8
Santiago de Cuba	June 25	June 25	Santiago de Cuba	June 10	June 10
Cienfuegos, Cuba	June 27	July 20	Guantanamo Bay, Cuba	do.	June 11
Santiago de Cuba	July 21	July 21	Santiago de Cuba	June 11	June 12
Guantanamo Bay, Cuba	do.	July 30	Kingston, Jamaica	June 16	June 17
Cienfuegos, Cuba	Aug. 1	Aug. 15	Santiago de Cuba	June 19	June 19
Key West, Fla.	Aug. 17	Aug. 19	Guantanamo Bay, Cuba	do.	June 23
Hampton Roads, Virginia	Aug. 22	Sept. 17	San Juan, Porto Rico	June 23	July 15
Norfolk, Va.	Sept. 17		St. Thomas, Danish West In-		
Yorktown, Commander C. H. STOCKTON, commanding.			dies	July 15	July 18
[Out of commission Dec. 8, 1897.]	1897.	1897.	Hampton Roads, Virginia	July 22	Aug. 15
Kobe, Japan	June 27	July 19	League Island, Pa.	Aug. 16	Aug. 23
Nagasaki, Japan	July 21	Sept. 15	Tompkinsville, N. Y.	Aug. 24	Aug. 26
Chefoo, China	Sept. 17	Sept. 22	Delaware Breakwater, D. C.	Aug. 28	Aug. 28
Yokohama, Japan	Sept. 27	Oct. 8	Fort Pond Bay, New York	Aug. 29	Aug. 29
			League Island, Pa.	Aug. 31	Sept. 1
			Tompkinsville, N. Y.	Sept. 1	Sept. 2
			League Island, Pa.	Sept. 4	Sept. 8
			Mole St. Nicholas, Haiti	Sept. 12	Sept. 13
			Hampton Roads, Virginia	Sept. 19	Sept. 19
			League Island, Pa.	Sept. 22	

The cruising reports of the following vessels not being complete at the date of going to press, it is impossible to furnish detailed reports of their cruise:

Active, Auxiliary Naval Force, Pacific coast.
Abarenda, collier, North Atlantic Station.
Alleen, Auxiliary Naval Force, New York.
Brutus, collier, Philippine Islands.
Chickasaw, Auxiliary Naval Force, Charleston, S. C.
Cesar, collier, North Atlantic Station.
Cassius, collier, North Atlantic Station.
Corwin, Auxiliary Naval Force, Pacific coast.
Leyden, North Atlantic Station.
Mangrove, North Atlantic Station.
Grant, Auxiliary Naval Force, Pacific coast.
Hamilton, North Atlantic Station.
Hudson, North Atlantic Station.
Huntress, Auxiliary Naval Force, New York.
St Paul, special service (North Atlantic).

St. Louis, special service, North Atlantic.
Nanshan, supply ship, Philippine Islands.
Nero, collier, Philippine Islands.
Rush, Auxiliary Naval Force, Pacific coast.
Saturn, collier, North Atlantic Station.
Sloux, North Atlantic Station.
Supply, North Atlantic Station. (Supply and refrigerating ship.)
Vixen, North Atlantic Station.
Vulcan, repair ship, North Atlantic Station and at Calmanera, Cuba.
McCulloch, dispatch boat, Philippine Islands.
McLane, North Atlantic Station.
Manning, North Atlantic Station.
Mayflower, North Atlantic Station.
Woodbury, North Atlantic Station.
Zafiro, supply ship, Philippine Islands.
Alert, Pacific Station.
Raleigh, Asiatic Station, Philippine Islands.

II.

REPORT OF THE SUPERINTENDENT OF THE COAST SIGNAL SERVICE.

NAVY DEPARTMENT,
OFFICE OF COAST SIGNAL SERVICE,
Washington, October 1, 1898.

SIR: I have the honor to submit the following report on the inception, organization, working, and utility of the Coast Signal Service, of which I was placed in charge, as superintendent, on May 9, 1898, and to suggest certain changes in the service which seem to me to be necessary after the practical trial which has been given it.

This service was organized in conformity with the recommendations of a board, convened by order of the Department on October 18, 1897, "for the purpose of considering the establishment of coast signal stations for naval defense." It is of interest to note how far it was possible to carry out the suggestions of the board under actual conditions, and in what respects it was necessary to modify them, and I therefore append the orders creating this board, together with its report (Appendix A). I also call attention to correspondence in regard to the establishment of coast signal stations subsequent to the report of the board, and designed to carry out its recommendations (Appendix B).

On March 15, 1898, the Secretary of the Navy issued orders to Capt. Caspar F. Goodrich, U. S. N., president of the Naval War College, to make and report with all practical dispatch a preliminary plan of arrangement for the establishment of a coast signal service on the Atlantic and Gulf seaboard. Captain Goodrich made his report, closely following the recommendations of the board above referred to, and contemplating the employment of the officers and signalmen of the various State naval militias, as therein recommended. On April 9, 1898, orders were issued to him to establish the coast-line system of signal stations according to the plan outlined by him, consulting from time to time with the Strategic Board, which was then considering the policy of the Department in matters of offense and defense. Copies of the orders and correspondence are hereto attached (Appendix C). By a reference to these it will be seen that the coast was divided into seven districts, with an officer in command of each.

Captain Goodrich established his headquarters in New York City, on board the U. S. S. *New Hampshire* (the armory of the First Naval Battalion of New York), and on April 22, 1898, telegraphed to the commanding officers of the Naval Militias of the seaboard States from Massachusetts to Louisiana, and to J. H. Hawley, esq., of Galveston, Tex., as follows:

Establish and man coast signal stations already determined by me. Lowest bids, greatest economy, most speed, necessary. Let crews sign temporary agreement, pending receipt of enlistment forms. No heliographs needed. Send further communications to superintendent, New York. (Appendix D.)

On April 23, 1898, Captain Goodrich having been ordered to sea, the Secretary of the Navy appointed Capt. Theodore F. Kane, U. S. N., retired, as superintendent of the Coast Signal Service, and designated his assistants. A copy of these orders is attached (Appendix E). The assistants named were already familiar with the plan adopted by the Department in all its details, and had selected competent quartermasters, signalmen, and telegraph operators from the naval militia. Within twenty-four hours from the time that Captain Goodrich sent the telegram above quoted, the men had proceeded to the points design-

ated as locations for signal stations and had reported. They were for the most part equipped with signal gear belonging to the various States, and took with them tents and camp outfits, with which they established temporary quarters. As rapidly as possible the shelter houses and apparatus ordered in accordance with Captain Goodrich's instructions were forwarded, so that in a week from that time all the stations, except those at the most outlying points, were fully established and equipped.

In accordance with orders from the Department, dated May 9, 1898 (Appendix F), I relieved Captain Kane as superintendent of the service, and transferred its headquarters to one of the rooms of the Office of Naval Intelligence in the Navy Department, and organized the office force with Lieut. Frank B. Anderson, U. S. N., as my assistant. This officer, while in the naval militia of the State of New York, had been a voluntary member of the board which laid out the system of "Coast Signal Stations for Naval Defense" (see Appendix A), and had assisted Captain Goodrich and Captain Kane in turn, and he, together with Lieut. Edwin C. Weeks, U. S. N., formerly navigating officer of the First Naval Battalion, New York, attended to the work at headquarters in the most satisfactory and efficient manner until the Coast Signal Service was discontinued. Pay Director L. G. Billings, U. S. N., retired, was ordered to headquarters to act as pay officer of the service, and has conducted his office with such care and precision that the accounts have all been readily and promptly settled. Lieut. Commander Edward D. Taussig, U. S. N., and P. A. Surg. Charles H. T. Lowndes, U. S. N., were at once sent to examine and enlist the men on the signal stations north of Cape Henry, Virginia, and Lieut. George L. Dyer, U. S. N., and P. A. Surg. H. N. T. Harris, U. S. N., performed similar duties at the stations south of that point.

This preliminary organization, when complete, contained 8 (instead of 7) districts, in which were distributed 36 signal stations, officered and manned entirely from the State naval militias, which contributed the following quotas, viz:

States.	Officers.	Men.
Massachusetts	2	41
Rhode Island		5
New York	1	25
New Jersey		5
Delaware		5
Virginia	2	5
North Carolina		23
South Carolina	2	20
Georgia		10
Florida	5	52
Alabama	2	19
Total	18	210

The equipment furnished the stations consisted of International Code flags and books, "wig wag flags," "shapes" (cones and drums), powerful telescopes and binoculars; and, for night use, torches and an improvised "Ardois" system of red and white lights. No pigeon cotes were provided, as the vessels with which it was designed to communicate were not furnished with carrier pigeon outfits. At each station quarters were built for the crew and a 90 foot mast erected, carrying a 40-foot yard. In some instances signal towers were built. The photographs of the various stations and masts, and a full set of working drawings

of the quarters, a map showing the location of the signal stations, and blue prints of telephone connections have been filed in the Office of Naval Intelligence for future reference, and are hereby referred to and made a part of this report. Each station was provided with a telegraph or telephone outfit, or with both. In most cases the stations were "looped" into the Life-Saving Service lines, which ran along the beach.

The crews of the stations consisted of one chief quartermaster, three quartermasters of the second class, and one landsman. At several of the most important points an extra telegraph operator, rated as quartermaster of the second class, was allowed. The men were divided into watches and armed with Springfield rifles, and a daily and weekly "Routine of exercise and drill" was issued, the manner of the performance of which was entered in the log. An inspection of the stations in each district was made once in every two weeks by the officer in charge, who reported to headquarters.

As soon as the stations had been established each was furnished with a log book, prepared and printed for the special use of the coast signal service, and with forms for weekly transcripts from the log; also forms for quarterly returns of property. Copies of the various forms prepared and used are annexed for future guidance (Appendix H). The station logs were kept from day to day, and when the weekly transcripts from them were received at headquarters all the incidents of the week, the drills and exercises, and every signal made or observed, could be noted. Lists of the stations were prepared and issued to the various steamship companies (Appendix I); a "Notice to mariners" was furnished to the Associated Press and by it to every newspaper in the country (Appendix J), and "Regulations" for the government of the coast signal service were prepared and approved by the Chief of the Bureau of Navigation and the Secretary of the Navy, and promulgated on June 15, 1898 (Appendix K).

The necessity of covering the long stretches of coast between these isolated stations was at once apparent, and the value of the cooperation of the Life-Saving Service and the United States Light-House and Weather Bureau systems became self-evident. The crews of the Life-Saving Service for ten months in the year (August to May) constantly patrol the beaches from Maine to Texas, and no vessel can approach within sight of the coast and escape their attention, while the light-house keepers and observers of the Weather Bureau have exceptional facilities for noting the approach of ships. The stations of the coast signal service were forthwith connected with the general telegraph and telephone systems of the country and with the Life-Saving Service telephone lines that link together their stations along the coast. When these arrangements had been completed, the observing powers of the 210 naval militiamen at the 36 stations of the coast signal service were reinforced by the watchful crews of the life-saving stations, including 1,443 men; the alert light keepers in the light-houses, numbering 850, and the personnel of the Weather Bureau, a total number of 33 observers. Thus, an aggregate of 2,526 men were on the lookout for the approach of an enemy's vessel or a suspicious craft of any sort, and ready to report the movements of the vessels belonging to our own forces, including all the auxiliary ships and transports.

The branches of the Government service which cooperated with the Coast Signal Service, as above described, promptly and efficiently performed the extra work entailed, and the cordial interest displayed by General Superintendent S. I. Kimball, of the Life-Saving Service, at

once made effective the arrangements authorized by the Secretary of the Treasury. Correspondence relating to this matter is hereto annexed (Appendix L). Owing to the fact that, under the existing law, the crews of the Life Saving Service would be laid off during the months of June and July, it was important to obtain the prompt passage of a bill authorizing the retention during these months of a sufficient number of surfmen to thoroughly patrol the coast and to keep the majority of the life saving stations open and in commission. A copy of this bill and the report made thereon by the Committee on Interstate and Foreign Commerce of the House of Representatives is annexed (Appendix M). The bill became a law on the 7th day of June, 1898.

As most of the stations of the Coast Signal Service were located at points many miles from towns or settlements, it was at once necessary to provide for the medical care of the men in case of accident or illness, and arrangements were made through the Secretary of the Treasury whereby Supervising Surg. Gen. Walter Wyman issued a circular to the officers of the Marine Hospital Service, directing them to render medical aid to the officers and men of the Coast Signal Service (Appendix N). This enabled the officers in charge of the Coast Signal Service districts to send their sick to the nearest marine hospital; but fortunately no necessity ever arose to take advantage of this arrangement. Emergency medical kits were also prepared under the direction of Lieut. Alexander Duane, U. S. N., in charge of the second coast signal district (who in civil life is a well known physician in New York City), and these, together with a manual for their use prepared by him, were furnished to each station and answered every purpose (Appendix O). It is a matter of congratulation that there were no casualties in the service and no serious illness. This is, in a large measure, due to the competency and carefulness of the officers in charge of the various districts, and the condition of the men along the whole coast can best be described by quoting from a letter written, when the service was discontinued, by a commanding officer of one of the districts on the Gulf, in which he says:

While their duties have been exacting and tedious, with considerable exposure to the weather, they have been well housed, well clothed, and well fed. They leave the service with regret.

Tests of the wires were made at the beginning of each watch and a daily telegram was sent from each station to the district headquarters, and from there to these headquarters, using a cipher word which indicated that all at the station were well and present for duty, and that the station and its equipment and telegraph lines were in good order. Arrangements were made with all the companies to give the Coast Signal Service the right of way over their wires, and uninterrupted and direct communication could be had by notifying the company in advance. Actual trials proved that it did not take more than half an hour to clear the wires and get direct communication from these headquarters to Jacksonville or Miami, Fla. Arrangements were also made to send notice direct from each district headquarters to officers of the Auxiliary Naval Force and the principal forts and batteries in the district of the presence of an enemy, the sighting of a suspicious vessel, or any other information of a character which might be of importance to them. This saved the loss of time which would be necessitated by transmission through these headquarters (Appendix P). The question of lamps caused this service considerable trouble, and, owing to the

very limited range of visibility of oil lanterns, they were abandoned. After numerous experiments at Fire Island Station a satisfactory and practical "Ardois" system was perfected by using acetylene gas. The lamps in this apparatus were 150 candlepower and have been read 9 miles away in spite of the glare of the Fire Island light-house, which was near by. A report on these experiments and the details of the system, with working drawings, are attached hereto (Appendix Q).

From the practical operation of the Coast Signal Service for three months I am confident that it would have served the use for which it was established—to observe and report the approach of an enemy's vessels. It frequently served an excellent purpose in keeping the Navy Department advised of the movements of United States vessels, and was particularly serviceable in several instances, such as the reporting and putting the Department in direct communication with the U. S. S. *Oregon* after her long run from the Pacific, and while the whole country was anxious for news of her; also in reporting the U. S. S. *San Francisco* when that vessel needed assistance and quick correspondence with Washington was of the utmost importance. It was also useful in keeping the various navy-yards advised of the approach of vessels, thus giving them advance notice of their arrival, and in many cases several hours in which to make preparation for their reception (Appendix R). Some of the stations were able to render valuable assistance to the Quartermaster's Department of the Army in keeping in close touch with the hospital and supply ships and transports, and by transmitting messages to them while they were in the offing. Perhaps, however, the most valuable result of the service has been the determination of those points at which signal stations are necessary in order to supplement in time of war the system of the Life-Saving Service, Light-House Service, and the Weather Bureau (which are the existing means of observing the movements of vessels in time of peace), and in perfecting the training of a large number of men outside of the Navy in the transmission of information by signals under the conditions that prevail on the water, so as to make a complete, continuous service, covering every mile of the coast from the most easterly point of Maine to the most westerly point of Texas. We now know where to find the officers and men to man these stations promptly and completely. The land for them (where not already owned by the Government) can be easily acquired or controlled for future use, and the men ought to be kept together as part of a United States naval reserve, the ranks of which should be constantly increased by the admission of those who are found qualified to perform the duties.

The result of my experience leads me to believe that the Coast Signal Service should be an integral part of a naval coast-defense system, as it is most intimately connected with it, and should be in closer relation than that of an allied branch; also that the personnel of this service can be entirely furnished by the men who have been trained in the State Naval Militias. They have proved, in our recent experiment, well disciplined, trustworthy, competent, and zealous, and I can speak in the highest terms of the officers and naval militiamen who entered the Coast Signal Service. The officers have been intelligent and painstaking, and their acquaintance with the men of their commands has resulted in a very high percentage of effective work. Another valuable result of the experiment has been to demonstrate the great usefulness of the life-saving stations for the purposes of observation and international code signaling, and to show that the light-houses are almost instantly

convertible, in an emergency, into quarters and signal towers. The "shapes" designed for the service as substitutes for the semaphore system were not a success, except as distinguishing signals to locate the stations on quiet days when there was not sufficient breeze to blow out the station flags, because their necessarily large size and light weight rendered them too weak to stand the exigencies of their use.

After the foregoing general outline of the work of the Coast Signal Service, I respectfully make the following suggestions for guidance in the future:

- 1 That each life-saving station should be made a coast signal station, for the reason that they are all connected (or can be readily connected) with each other by telephone (with offsets to the general telephone or telegraph systems of the country at convenient points), and then system of the patrol of the beach places almost the entire coast line under constant observation. Moreover, the men in this service are trained to see everything that floats within the range of vision, are trustworthy and well disciplined, and are already excellent signalmen with the International Code. A knowledge of the "wigwag" code and the Navy night signals would perfect them for the purposes intended. A law should be enacted enabling the President to keep this service in commission during June and July, whenever the public interests demand it, and without special legislation.

- 2 That each Weather Bureau station should be made a coast signal-service station, for the reason that the observers are trained signalmen with the International Code, their stations are exceptionally situated for the purposes intended, and are all connected by wire with the general telegraph systems of the country.

- 3 That the light houses so situated as to fill in the gaps between the life-saving stations and the Weather Bureau stations be made coast signal service stations, for the reason that it is possible at moderate expense to provide them with telegraph or telephone connections. Many of these connections have been made.

- 4 That permanent coast signal service stations be established at Monhegan Island (when connected with the mainland by cable); Rockport Cape Ann, Mass.; Highland Lights (Cape Cod, Massachusetts; Montauk Point, New York; Fire Island, New York; Sandy Hook, New Jersey; Barnegat, N. J.; Cape Henlopen, Delaware; Cape Henry, Virginia; Morris Island, South Carolina; Tybee Island, Georgia; Palm Beach, Florida, and Sand Island, Florida, for the reason that these points have been found to be important for observation.

- 5 That at each of the stations suggested in the four paragraphs above, three armed semaphore apparatus and an acetylene gas "Ardois" system be installed, for the reason that these seem to be the best fixed mechanical appliances to meet the requirements of day and night signaling, also, that all stations be provided with "wigwag" flags, International Code signals, and "Very" pistols.

- 6 That for use in time of war a special signal code be prepared and furnished to all the stations of the Coast Signal Service, conforming to the Navy code and using the Navy numeral flags and the "Very" pistols, for the reason that although the International Code is ample for communication in time of peace, its universal use makes it of no value when secrecy is necessary, and a code should be employed in war times which could only be read by those who have been furnished with it.

- 7 That experiments be made for the purpose of training homing pigeons in connection with coast signaling, for the reason that they

offer a solution of the problem of communication with vessels in the offshore patrol fleet. These vessels would most probably operate in districts having established bases, and at such a distance from the coast and from the inshore patrol that visual signaling would be impossible. A homing-pigeon service can not be improvised and be of any real value. The birds must be systematically and patiently trained for a year or two, not only to equip the cotes with trained carriers for that locality, but to furnish stock with sea-bred breeders. Experimental cotes should be located at the bases of naval coast-defense districts, a small vessel provided with a carrier-pigeon outfit, and an officer detailed to develop this means of communication and superintend the systematic training of the birds. Unless this is done with intelligence and thoroughness for at least a year it would be useless to rely upon it at all.

Such a system could be very economically inaugurated and could be maintained at a comparatively slight cost. A simple routine of drills, exercises, and reports, based upon our recent experiences, could be readily put into operation, and small rewards or appropriate ratings would stimulate proficiency. In times of peace such a service would be of constant convenience to this Department and to the maritime interests of the country, and the constant practice would prepare the men for the emergencies of war. Attention is called to the fact that every other maritime nation has such a system, generally much more elaborate than the one herein proposed, organized by and operated under its naval or maritime department. I regard it as most essential to the naval and commercial interests of the United States.

In closing up the coast signal service the wires connecting the lighthouses, Weather Bureau offices, and life-saving stations which had been put in for the purposes of the war, were turned over to the branches of the Government service with which they were connected, as were also the masts and shelter houses wherever possible, in order that they might be preserved for future emergency. Where this was not possible they were condemned and sold. The gear and equipment of all the stations were carefully packed in boxes and sent to the nearest navy yards and a receipt taken for the same from the pay officer representing the Bureau of Supplies and Accounts. The records and correspondence of the stations and of these headquarters have been stored in the Navy Department, and as a result the connections and equipments of the service are available whenever needed, together with the correspondence and data concerning them.

A financial statement of the moneys appropriated and of the expenditures for the installment and maintenance of the service during the time it was in commission is as follows:

Appropriations:

National defense, allotment made April 9, 1898	\$75,000
Deficiency appropriation, act July 7, 1898, for May and June	75,000
Deficiency appropriation, act July 7, 1898, to January, 1899.....	200,000
Total amount appropriated	350,000

Statement in detail, showing cost of establishing and maintaining the Coast Signal Service, from April 22 to September 30, 1898, and the disposition of property upon abandonment of the service.

Expenditures:

For telegraphing, transportation, building telegraph and telephone lines, clerk hire, charter of vessels, and general maintenance of stations	\$27, 632. 09
Condemned and expended for use in the service.....	11, 121. 29

Material turned over to—

Navy-yards	\$16, 819. 83	
Light-House Establishment	9, 942. 70	
Life-Saving Service	3, 392. 92	
Weather Bureau	3, 949. 80	
Auxiliary Navy	340. 05	
		<u>34, 445. 30</u>

Total amount expended	<u>73, 198. 68</u>
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Total amount appropriated	350, 000. 00
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Total amount expended	<u>73, 198. 68</u>
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Balance unexpended	276, 801. 32
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I append the report of Pay Director L. G. Billings, United States Navy, who had charge of the disbursement of the funds appropriated. (Appendix S.)

All of which is respectfully submitted.

JOHN R. BARTLETT,
Captain, U. S. N., Retired,
Superintendent U. S. Coast Signal Service.

The CHIEF OF BUREAU OF NAVIGATION,
Navy Department.

APPENDIXES.

APPENDIX A.

OCTOBER 18, 1897.

SIR: A board consisting of yourself as senior member, Lieut. Charles H. Harlow, U. S. N., and Lieut. John H. Gibbons, U. S. N., is hereby appointed, to meet at the Navy Department, Washington, D. C., at 10 a. m. on the 25th instant, for the purpose of considering the coast signal stations for naval defense.

You will assemble the board on the date and at the time specified.

The members of the board have been directed to report to you for this duty.

This duty is in addition to your present duties.

An invitation has been extended by the Department to Lieut. Frank B. Anderson, signal officer, Naval Militia of New York, to be present at the meeting of the board, and to act as a voluntary member thereof.

Respectfully,

JOHN D. LONG, *Secretary.*

Commander JOHN SCHOUER, U. S. N.,

Navy Department, Washington, D. C.

NAVY DEPARTMENT,
Washington, D. C., October 27, 1897.

SIR: In obedience to an order of the Department, dated October 18, 1897, a copy of which is hereto attached, the board appointed for the purpose of considering the coast signal stations for naval defense met at 10 a. m. on the 25th instant at the Navy Department.

After consideration of the question the board has the honor to submit the following report:

The board regards the question of communication as divided into two heads.

(a) From the sea to the shore.

(b) From the shore to the sea; and in its recommendation it has kept in mind such means of communication as are already recognized and established in the naval service within easy reach of the naval militia, and the possibility of enlisting the cooperation of the Treasury Department for using the life-saving stations, particularly such as are or might easily be put in telegraphic communication with headquarters.

(a) COMMUNICATION FROM SEA TO SHORE.

Considering the importance of receiving information from a distance beyond the range of visibility, there seems to be but one method which has already had sufficient success to warrant the board recommending it as the best method for communicating from a fleet, scouting vessels, or picket boat at distances ranging from 10 to 50 miles, with a possible extension to 100 miles—the homing pigeon. This, of course, is limited entirely to daylight; but inasmuch as the same difficulties which militate against the successful use of the homing pigeon are present with the fleet or scouting vessels in obtaining information, the board is of the opinion that this service, which already exists in the Navy Department, should be so extended as to cover such points of the coast as are within the control of the Treasury Department or the various State naval militias. At night the use of the search light for distance of perhaps 10 miles, and the Very's night signals within 15 miles, have been experimented with to such degree of success as to warrant its recommending these two methods for communicating from sea to shore after nightfall.

(b) COMMUNICATION FROM SHORE TO SEA.

It is not believed that any system of flags in itself can be relied upon with any certainty, considering the difficulties which a calm, on-shore wind, a hazy atmosphere, and the peculiar character of a shore background present. The board is therefore of the opinion that some system based on the use of shapes or semaphores is the only one which can be relied upon. There already exists in section 1, part 3, of the International Code of Signals, with which all life saving stations are either supplied or can easily be supplied, a system of distant signals requiring (1) a ball, pennant, and square flag, or (2) a 3-armed semaphore. The semaphore, however, should be fitted with four elements instead of three, as it is believed that the holding of the display for any appreciable length of time is of much greater value than the temporary transient display which it is necessary to make with any semaphore having less than the four elements.

It is thought that these 4-armed semaphores can readily be made to

conform to existing codes or such codes as could be easily and quickly adapted to meet the peculiar character of the information which they are likely to be called upon to transmit. The board believes that it is necessary for these stations to have men thoroughly conversant with the wig-wag code, and that as far as possible it be required that they must be prepared to receive messages which are sent by this code. It is also believed that the semaphore or shape systems can be readily adapted to meet the demands of the wig-wag code.

It is believed that the means of transmission of intelligence from such stations as may be selected to the main telephone and telegraph wires either already exist or can, with the assistance of the Naval Militia, quickly be installed and afford a certain method of transmitting intelligence to headquarters.

Having those systems in mind, the board has so subdivided the coast that the important centers, such as naval stations or strategic points, shall be amply protected by the methods proposed; and it has the honor to submit herewith charts marked, respectively, B and C of the Atlantic and Gulf and the Pacific coasts, showing the points at which, in its opinion, homing pigeon cotes and semaphore apparatus should be installed, and steps be taken to instruct a sufficient number of men at each one of them in the use of these appliances, so that the system may be carried on at least experimentally until more specific arrangements can be made for their care and maintenance. (See Appendix A.)

The board is fully of the opinion that the general supervision of this system of coast signal stations for naval defense should be under the direction of the Navy Department, each State having control of such subsidiary stations as may exist or be established within its limits; that there should be a general supervision exercised by the regular service in such a way that there should be no departure by any one of the districts from the general scheme, which is to be directed by the Navy Department. It believes that a semiannual inspection by some officers appointed by the Department would be sufficient for this purpose, and that it will devolve upon the Naval Militia to make also a semiannual report as to the efficiency of such stations as they may establish in their districts.

It is suggested that the Naval Militia can very properly take charge of all lines of communication within their districts, establish subsidiary stations in connection with the coast signal stations, keep in touch with the men, and prepare plans for the rapid connection of all stations with the long-distance telephone and telegraph systems of the country. Further, that they make such arrangements with the different telegraph companies as will enable them to keep their information up to date and be able to report all changes to the Navy Department.

Any scheme of this nature will, of course, require the cooperation of the Treasury Department. The naval features of it should be, in the opinion of the board, under the direction of the Bureau of Equipment, and steps should be taken by the Navy Department to secure such cooperation of the Treasury Department as will insure an intelligent assistance in matters of naval defense.

It is believed, as essential to the success of this scheme, that some extra compensation should be awarded to the men that may be called upon to take charge of and manipulate the plant at the various stations.

The board is of the opinion that a compensation at the rate of \$5 per month extra for the keeper of each station should be given, and that a certain standard of proficiency in the use of signals be adopted; and, further, that a reward of \$10 be held out each six months for all such

persons employed at the stations as may be, upon inspection, found to reach the standard.

It is not thought to be within the province of the board to go into details of either pigeon cotes, construction of semaphores, or other methods of signaling. The Bureau of Equipment is already supplied with sufficient information to render the installation of these methods a very simple matter. Their expense, of course, will have to be a subject for special appropriation, but it is not believed that the sum total for all stations will amount to any very considerable sum.

JOHN SCHOULER,
Commander, U. S. N., Senior Member of Board.

O. H. HARLOW,
Lieutenant, U. S. N., Member.

J. G. GIBBONS,
Lieutenant, U. S. N., Member.

FRANK B. ANDERSON,
*Lieutenant, Signal Officer Naval Militia of
New York, Voluntary Member.*

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REPORT OF THE CHIEF OF THE BUREAU OF ORDNANCE.

NAVY DEPARTMENT, BUREAU OF ORDNANCE,
Washington, D. C., October 1, 1898.

SIR: I have the honor to submit the annual report of this Bureau, and also to transmit estimates for the fiscal year ending June 30, 1900:

ESTIMATES.

Fuel, tools, material and labor, maintenance of proving ground, for target practice, reserve supply of ammunition, conversion of 6-inch guns to rapid-fire, purchase and manufacture of smokeless powder, machinery for gun plant	\$1, 875, 000.00
Reserve guns for auxiliary cruisers	250, 000.00
Continuing smokeless-powder factory	25, 000.00
General expenses of the torpedo station	65, 000.00
Fitting Fort Lafayette for magazine purposes	5, 000.00
General repairs to buildings, magazines, etc	30, 000.00
Naval militia	60, 000.00
Contingent, freight, etc	15, 000.00
Civil establishment at navy-yards	32, 858.50
Machinery for new ordnance building at League Island	60, 000.00
Additional land, etc., for magazine near Norfolk	27, 500.00
Steam lighter for League Island Navy-Yard	30, 000.00
Toward armament and armor for vessels authorized	4, 000, 000.00
Total	6, 475, 358.50

BREECH-LOADING RIFLES.

The following table shows the present state of main-battery guns whose construction has thus far been authorized, and their general assignment:

Class.	Num-ber of guns com-pleted.	Partly com-pleted.	Forg-ings ordered.	Total guns ordered.	Assignment.					
					New Navy.	Old vessels.	Train-ing ships.	Avall-able for auxil-iary.	Reserve for ships of Navy.	Total.
12-inch. 35 caliber..	29	2	3	34	32	0	0	0	2	34
12-inch. 35 caliber..	14	0	0	14	12	0	0	0	2	14
10-inch. 30 caliber..	24	0	0	a 24	16	0	0	0	4	20
10-inch. 35 caliber..	2	0	0	2	2	0	0	0	0	2
8-inch. 30 caliber...	9	0	0	9	9	0	0	0	0	9
8-inch. 35 caliber...	65	2	5	72	63	0	0	0	9	72
8-inch. 40 caliber...	2	0	0	2	2	0	0	0	0	2
6-inch. 30 caliber...	123	0	0	b 123	148	0	0	47	0	195
6-inch. 35 caliber...	6	0	0	6						
6-inch. 40 caliber...	43	19	6	68	2	0	0	0	0	2
5-inch. 30 caliber...	2	0	0	2	2	0	0	0	0	2
5-inch. 40 caliber...	171	6	20	197	125	12	0	60	0	197
4-inch. 40 caliber...	130	10	71	211	133	6	19	53	0	211
4-inch. 50 caliber...	0	0	26	26	0	0	0	0	26	26
Total	620	39	131	790	544	18	19	160	43	784

a Four lost on the Maine. b Two lost on the Maine.

NOTE.—There still remain to be contracted for, batteries for vessels authorized by act of Congress approved May 4, 1898.

GUN CARRIAGES.

The following table shows the status of gun carriages made, in progress, and required:

Caliber.	For vessels of the new navy.	For old ves-sels.	For train-ing ships.	For auxil-iary cruis-ers.	For reserve.	Total re-quired.	Number of sets of castings ordered.	Cast-ings still to be or-dered.	Car-riages com-plete to date.	Car-riages partly com-pleted.
4-inch	133	6	19	53	26	237	211	26	191	15
5-inch	127	12	.....	60	.....	a 199	197	0	154	23
6-inch	148	.....	.....	47	.....	a 195	185	3	143	29
8-inch	74	.....	.....	.....	9	a 83	b 71	0	70	7
10-inch	18	.....	.....	.....	4	a 22	b 19	0	19	0
12-inch	12	.....	.....	.....	2	14	b 14	0	14	0
12-inch	32	.....	.....	.....	2	34	b 34	0	17	6
Total	544	18	19	160	43	784	731	29	608	80

a Of the above, 2 5 inch, 21 6-inch, and 12 8-inch were not made of steel castings; and 4 10-inch carriages were furnished to *Terror* by Pneumatic Gun Carriage and Power Co.; also, 14 6-inch and 2 8-inch carriages are obsolete, due to change in guns.
b Includes proof mount.

Gun forgings.

	3-inch.	4-inch.	5-inch.	6-inch.	8-inch.	10-inch.	12-inch.	18-inch.	Total.
Required.....	102	237	199	195	83	22	14	34	886
Ordered	102	a 237	199	b 197	83	c 26	14	34	892
Delivered	101	209	199	197	80	26	14	34	860
Not delivered	d 1	28	.....	.....	3	.....	.....	.....	32

a 1 condemned. b 2 condemned, 2 lost on the Maine.
c 4 lost on the Maine. d 3-inch, 50 calibers (14-pounder).

Assignment of guns of main battery.

Object.	4-inch.	4.7-inch.	5-inch.	6-inch.	8-inch.	10-inch.	12-inch.	13-inch.	Total.
Chicago			14		4				18
Boston				6	2				8
Atlanta				6	2				8
Dolphin	3								3
Newark				12					12
Charleston				6	2				8
Yorktown				6					6
Petrel				4					4
Baltimore				6	4				10
Olympia			10		4				14
Texas				6			2		8
Philadelphia				12					12
San Francisco				12					12
Concord				6					6
Bennington				6					6
Monterey						2	2		4
Cincinnati			10	1					11
Raleigh			10	1					11
Montgomery			10						10
Detroit			10						10
Marblehead			10						10
Bancroft	4								4
New York	12				6				18
Puritan	6						4		10
Miantonomoh						4			4
Amphitrite	2					4			6
Monadnock	2					4			6
Terror						4			4
Machias	8								8
Castine	8								8
Indiana				4	8			4	16
Massachusetts				4	8			4	16
Oregon				4	8			4	16
Columbia	8			2	1				11
Minneapolis	8			2	1				11
Iowa	6				8		4		18
Brooklyn			12		8				20
Nashville	8								8
Wilmington	8								8
Helena	8								8
Annapolis	6								6
Vicksburg	6								6
Newport	6								6
Princeton	6								6
Wheeling	6								6
Marietta	0								0
Kearsarge			14		4			4	22
Kentucky			14		4			4	22
Illinois				14				4	18
Alabama				14				4	18
Wisconsin				14				4	18
Hartford			13						13
New Orleans		4		6					10
Topeka	6								6
Albany		4		6					10
Total for vessels of the new Navy	133	8	127	160	74	18	12	32	564

Summary of assignment—main battery.

[NOTE.—The batteries of the *New Orleans* and *Albany* were purchased with the vessels and are not included in the following table.]

Object.	4-inch.	5-inch.	6-inch.	8-inch.	10-inch.	12-inch.	13-inch.	Total.
Total number of guns made, in progress, or ordered	237	199	a 197	83	26	14	34	790
Number required to arm vessels of the new Navy	133	127	148	74	18	12	32	544
Number required for and assigned to old vessels, viz:								
Lancaster		12						12
Ranger	6							6
	6	12						18

a 2 lost on *Maine*; 2 condemned.

Summary of assignment—main battery—Continued.

Object.	4-inch.	5-inch.	6-inch.	8-inch.	10-inch.	12-inch.	13-inch.	Total.
Number required for and assigned to training ships, viz:								
Essex.....	6	.....	.....	.....	.....	.....	.....	6
Alliance.....	6	.....	.....	.....	.....	.....	.....	6
Pensacola.....	1	.....	.....	.....	.....	.....	.....	1
Adams.....	6	.....	.....	.....	.....	.....	.....	6
	19	.....	.....	.....	.....	.....	.....	19
Remaining available for auxiliary cruisers or reserve for Navy.....	a 79	60	b 49	9	c 8	2	2	209

a 1 condemned.

b 2 lost on *Maine*; 2 condemned.c 4 lost on *Maine*.*Assignment of secondary batteries.*

Vessel.	14-pound- er.	6-pound- er.	3-pound- er.	1-pound- er.	37-milli- meter.	47-milli- meter.	Machine guns.	Field guns.	Total.
Chicago.....	7	.....	2	.....	.....	2	1	12
Boston.....	2	2	2	2	2	2	1	13
Atlanta.....	6	.....	4	.....	.....	2	1	13
Dolphin.....	2	2	2	.....	.....	.....	2	.....	8
Newark.....	8	.....	4	.....	.....	4	1	17
Charleston.....	4	2	6	.....	.....	2	1	15
Yorktown.....	2	2	2	2	.....	2	1	11
Petrel.....	2	1	2	.....	2	1	8
Baltimore.....	4	2	2	4	.....	2	1	15
Olympia.....	14	.....	7	.....	.....	2	1	24
Texas.....	12	.....	6	4	.....	2	1	25
Vesuvius.....	5	.....	.....	.....	.....	.....	5
Cushing.....	3	.....	.....	.....	.....	3
Philadelphia.....	4	4	2	8	.....	4	1	18
San Francisco.....	4	4	2	8	.....	4	1	18
Concord.....	2	2	.....	2	.....	2	1	9
Bennington.....	2	2	.....	2	.....	2	1	9
Monterey.....	6	.....	4	.....	.....	2	1	13
Cincinnati.....	8	.....	2	.....	.....	2	1	13
Raleigh.....	8	.....	4	.....	.....	2	1	15
Montgomery.....	6	.....	2	.....	.....	2	1	11
Detroit.....	6	.....	2	.....	.....	2	1	11
Marblehead.....	6	.....	2	.....	.....	2	1	11
Bancroft.....	2	8	1	.....	.....	1	.....	12
New York.....	8	.....	2	.....	.....	2	2	14
Puritan.....	6	.....	2	2	.....	.....	1	11
Miantonomoh.....	2	2	6	.....	.....	2	1	13
Amphitrite.....	2	2	6	2	.....	1	1	14
Monadnock.....	2	2	2	2	.....	2	1	11
Terror.....	2	2	2	2	.....	2	1	11
Machias.....	4	.....	2	.....	.....	1	1	8
Castine.....	4	.....	2	.....	.....	1	1	8
Katahdin.....	4	.....	.....	.....	.....	.....	.....	4
Indiana.....	20	.....	7	.....	.....	2	2	31
Massachusetts.....	20	.....	6	.....	.....	2	2	30
Oregon.....	20	.....	6	.....	.....	2	1	29
Columbia.....	12	.....	2	.....	.....	2	1	17
Ericsson.....	4	.....	.....	.....	.....	4
Minneapolis.....	12	.....	2	.....	.....	2	1	17
Iowa.....	20	.....	4	.....	.....	4	2	30
Brooklyn.....	12	.....	4	.....	.....	4	2	22
Nashville.....	4	.....	2	.....	.....	2	1	9
Wilmington.....	4	.....	4	.....	.....	4	1	13
Helena.....	4	.....	4	.....	.....	2	1	11
Foote.....	3	.....	.....	.....	.....	3
Rodgers.....	3	.....	.....	.....	.....	3
Winslow.....	3	.....	.....	.....	.....	3
Annapolis.....	4	.....	2	.....	.....	1	.....	7
Vicksburg.....	4	.....	2	.....	.....	1	1	8
Newport.....	4	.....	2	.....	.....	1	1	8
Princeton.....	4	.....	2	.....	.....	1	1	8
Wheeling.....	4	.....	2	.....	.....	1	1	8
Marietta.....	4	.....	2	.....	.....	1	1	8
Kearsarge.....	20	.....	6	.....	.....	4	2	32
Kentucky.....	20	.....	6	.....	.....	4	2	32
Porter.....	4	.....	.....	.....	.....	4
Du Pont.....	4	.....	.....	.....	.....	4
Rowan.....	4	.....	.....	.....	.....	4

Assignment of secondary batteries—Continued.

Vessel.	14-pound- er.	6-pound- er.	8-pound- er.	1-pound- er.	37-milli- meter.	47-milli- meter.	Machine guns.	Field guns.	Total.
Monongahela		2			4		1	1	8
Alert		2			2		2	1	7
Essex		4		2			2	1	9
Alliance		4		2			1	1	8
Lancaster		6		4			2	1	13
Vermont		1	1	1	1			1	5
Hartford		4					2	1	7
Adams		4		2			1	1	8
Michigan		6		2			2		10
Ranger		4					1	1	6
Pensacola		1	1	1			1	1	5
Pinta			3				2		5
Illinois		16		4			4	2	26
Alabama		16		4			4	2	26
Wisconsin		16		4			4	2	26
Marion		6		2			2	1	11
Dahlgren				4					4
Craven				4					4
New Orleans		10	4	4			4	2	24
Topeka			4	2			1		7
Albany		10	4	4			4	2	24
Farragut		4							4
Davis				3					3
Fox				3					3
Morris				3					3
Talbot				1					1
Gwin				1					1
Mackenzie				1					1
McKee				1					1
Fern		3							3
Torpedo boat No. 19		4							4
Torpedo boat No. 20		4							4
Torpedo boat No. 21		4							4
Total	2	472	62	233	39	2	140	73	1,023

Since the date of last report, 112 guns of various calibers from 4 to 13 inch have been completed at the naval gun factory, viz: Sixteen 4-inch, fifty-four 5-inch, twenty-nine 6-inch, one 12-inch, and twelve 13-inch, and thirty-three 6-inch and two 8-inch guns of ordinary type have been converted into quick-firing guns.

Thirty-seven 4-inch guns and mounts under contract with private firms have also been partly completed. Forgings have been ordered for five 8-inch, twenty 5-inch, twenty-six 4-inch, and one 3-inch (14-pounder) guns.

While no material change has been made during the year in the general system of construction of guns under manufacture, new designs have been prepared for future guns of all calibers, calculated to insure a much greater muzzle energy than is now obtained from guns of the same caliber at present in service. The first of these new guns will be installed on board the battle ships *Maine*, *Ohio*, and *Missouri*, and on board of the four harbor-defense monitors authorized at the last session of Congress.

The work on gun construction is well in advance of all vessels authorized; more so than is that upon the heavy gun mounts, due to the tardiness of some of the contractors in delivering steel castings therefor, but there is good ground for believing that all will be completed before the vessels themselves are ready.

The guns and mounts and their appurtenances in service have been severely tested during the recent war, and it is gratifying to be able to report that their performance has been in general thoroughly satisfactory. Some minor defects in the details of some of the mounts for guns of small caliber developed, and were quickly, or are being, corrected.

Reports have been received from the various vessels as to the performance of their ordnance, and the general tenor of them has been that guns, mounts, turrets, and ammunition worked well. That such should be the case in so complex a structure as is a battle ship and its equipment is certainly gratifying. Improvements are constantly being made, and each new vessel is superior to her predecessor in many details of her armament and ordnance outfit.

Aside from the current work of the Bureau a vast amount of work has been performed at the various navy-yards and stations, during the recent war, in fitting out auxiliary vessels and in the preparation and distribution of ammunition and ordnance supplies of all kinds, and in increasing the reserve supply to meet probable requirements.

As soon as war became imminent orders were given for large quantities of powder, projectiles of all kinds, fixed ammunition, small arms, and small guns for secondary batteries, and contractors were required to carry on work without intermission, and to increase their capacity. All vessels of the Navy were filled up with ammunition, even those on foreign stations, and supply vessels laden with a reserve supply were kept in readiness to supply the fleets.

Gun-cotton mines and mining outfits in large numbers were prepared and issued, and launching tubes, etc., for seventy-five auxiliary torpedo boats were also prepared. The Government shops were required to work continuously, and by these means an adequate supply of war material of all kinds was procured.

The following auxiliary vessels were supplied with batteries and complete ordnance outfits, and the Bureau could easily have fitted out many more had they been called into service:

[illegible]

Batteries placed on vessels purchased, chartered, and turned over to the Navy by other Departments—Continued.

No.	Name.	Displacement.	Type	Main battery					Secondary battery.							Total.		
				8-inch.	6-inch.	4-inch.	60-pounder.	20-pounder.	3-inch.	14-pounder.	9-pounder.	6-pounder.	3-pounder.	1-pounder.	47-millimeter.		37-millimeter.	Machines.
90	Southery	Tons.	Collier.															2
91	Sterling	4,729	do															4
92	Supply	2,540	Supply ship															2
93	Vulcan	3,543	Steamer															2
94	Calumet	174	Revenue-cutter															1
95	Hamilton	250	do			1												1
96	Hudson	174	do															1
97	Manning	980	do			3												2
98	McCulloch	1,280	do															1
99	Merrill	397	do			2												2
100	Wisdom	325	do			1												3
101	Wardhury	370	do															1
102	Armeria	1,600	Light-house tender															2
103	Mangrove	620	do															2
104	Maple	700	do			3												1
105	Swansea	2,135	do			2												1
106	Albatross		Fish commission vessel.															2
107	Fish Hawk		do															6
Total				20	67	26	1	2	24	1	3	160	111	63	10	20	70	578

In addition, the following vessels of the Regular Navy were equipped, making a total of 121 vessels furnished with batteries during the year:

Vessel.	Battery.				
	4-inch.	6-pounder.	1-pounder.	Machine.	Total.
Craven			4		4
Dupont			4		4
Davis			3		3
Dahlgren			4		4
Farragut		4			4
Fox			3		3
Gwin			1		1
Morris			3		3
Mackenzie			1		1
McKee			1		1
Princeton	6	4	2	1	13
Talbot			1		1
Vicksburg	6	4	2	1	13
Winslow			4		4
Total	12	12	33	2	59

The battery for the *Atlanta*, consisting of two 8-inch and six 6-inch converted rifles, mounted on new and improved mounts, has been practically completed.

Four new 8-inch guns and mounts for the *Chicago* are in process of manufacture and well advanced.

The *Newark* and *Yorktown* have each received batteries of 6-inch converted rifles in place of their former guns, and the *Oregon* has received four 6-inch, 40 caliber, rapid-firing guns in place of her 30 caliber breech-loading guns.

The arrangements for facilitating the loading of the 12-inch guns of the *Texas*, designed by Lieutenant Haeseler, U. S. N., were completed and installed in the vessel and proved an unqualified success, reducing the time required for loading from eight to less than two minutes, thus greatly increasing the efficiency of this vessel. This change was authorized upon condition that the vessel should be ready for service at any time within forty-eight hours' notice, and the work was so well arranged and executed that these conditions were fulfilled.

New elevating gear of an improved type has been supplied to the 8-inch turret guns of the *Brooklyn* and *Iowa*. The type mount for the 13-inch guns of battle ships Nos. 5, 6, 7, 8, and 9 has been completed, tested, and shown to be entirely satisfactory, being automatic in its action and not requiring any auxiliary power to operate.

New types of mounts for 6-inch and for 4-inch rapid-firing guns have been designed, and one of the latter is being manufactured for a new high-power 50-caliber 4-inch gun.

A new type of rammer, intended for turret vessels, having hydraulic power, has been designed and designated as the hydro-pneumatic rammer. It is much simpler than the old type of hydraulic rammer, and much stronger. Four have been supplied to the *Oregon*, four to the *Texas*, and others are in process of manufacture to replace the old types of hydraulic rammers in service. New vessels will be supplied with a simple form of telescopic rammers capable of being operated by hand or by electric power.

The use of electric power for turning turrets, hoisting ammunition, and operating gun-working machinery, which the Bureau has strongly advocated for some years past, has demonstrated its superiority over any other kind of power for these purposes, and the Department is

be congratulated upon its action in designating its use, in ships now building and to be built, to the extent it has.

A simple expansion of the electric plant is sufficient to furnish the requisite power, and the facility of running cables, as compared with steam, pneumatic, or hydraulic pipes, the absence of heat, which causes so much discomfort in modern vessels, and the perfection of control and ease of manipulation of which it is susceptible render the electric system immeasurably preferable to any other which depends upon long leads of pipes under high pressure, with numerous packed pistons, valves, and joints.

Experience has shown that guns in turrets operated by electric power can be more accurately laid upon and made to follow a moving target than when operated by steam, hydraulic, or pneumatic power. There are no water pipes to freeze, no steam pipes to burst, and no delay in obtaining a full working pressure, and no troublesome or noisy exhaust pipes to deal with. A burnt-out fuse can be quickly replaced or a broken wire repaired, and as the wires can be led below the armored deck, there is little liability of the latter becoming necessary.

It is true that intelligence, skill, and watchful attention are necessary to care for and to insure the proper working of the elaborate auxiliary machinery and numerous mechanical appliances now installed in modern vessels, but there seems to be no difficulty in this respect. Officers and men readily adapt themselves to new conditions, no matter how novel or intricate their character, and it is a well-known fact that seamen gunners trained at the Naval Gun Factory and at the torpedo station are eagerly sought for by commercial houses on account of their proficiency, and often give up the service to accept the higher pay offered.

All guns of and above 4 inches in caliber are now fitted with attachments for using either electric or percussion primers, but on account of the additional elaboration necessary for this purpose the Bureau intends to use percussion ammunition only in guns of and below 5 inches in caliber. While electric firing is preferable, the means of producing it are more elaborate, and any fault is more difficult to locate than is the case with percussion firing. Results vary very much, however, in different vessels having similar outfits, due, unquestionably, to the difference in the amount of care bestowed.

When smokeless powder was first introduced for minor-caliber guns using fixed ammunition, some difficulty was experienced on account of hang fires. This has been entirely overcome by the use of a specially designed long primer.

Several instances were reported to the Bureau of failure to explode of shells fitted with base percussion fuses, even after striking masonry or other mediums offering considerable resistance, in consequence of which all fuses of this character will be made much more sensitive hereafter, without, however, rendering them less safe to handle or transport.

The adjustable combination time and percussion fuses now in service are accurate and reliable.

The Bureau is now carrying on experiments with a new form of base fuse, which does not contain a fulminate cap.

All new guns of and above 4 inches in caliber are fitted with telescopic sights, and in addition an auxiliary horizontal bar sight is supplied to ship in place of the telescope in case of accident to the latter.

As the weakest part of a turret is its sighting hood, in which has hitherto been located the only means of sighting the turret guns, the

Bureau has decided to attach to all turret guns a bar sight to be used through a slit in the armor, in addition to the telescope in the sighting hood. A 6-inch projectile at moderate range would probably destroy any sighting hood if fairly struck, and, while the turret and guns might still be intact, the means of sighting would be gone.

The Bureau has in process of manufacture at the Naval Gun Factory 100 heavy 1 pounder automatic guns, nearly half of which are practically completed. These guns fire at the rate of 250 shots per minute, but are nearly as heavy and as large as a 6 pounder, and have the disadvantage of using their ammunition from belts, which is always a source of more or less trouble. The Bureau does not consider the 1-pounder guns as of any appreciable value in the economy of a battle ship or large cruiser, except, perhaps, for boat guns, and will substitute for them on the torpedo boats about to be built the 3 pounder semiautomatic guns. When automatic guns work well they are ideal, but when anything goes wrong the difficulty can not be quickly remedied as a rule.

The Bureau is also making sixty-five semiautomatic 6 pounder guns at the Naval Gun Factory, intended for the new torpedo-boat destroyers, which will carry in addition to five such guns two 12-pounders each. A 6 pounder semiautomatic gun of the kind above referred to was recently fired 1,000 rounds at the proving ground without hitch or the failure of any part of the mechanism, and probably might be fired many more times.

A new high powered 3 inch gun (14-pounder) has been designed, calculated to have a muzzle velocity of 3,000 foot-seconds, and the forgings for the type gun have been ordered. A new mount is also being made for this gun.

Several years ago when the Bureau began the manufacture of rapid-firing guns, it had two 6 inch guns made with the ordinary obturator and quick working breech mechanism operated by a lever, which worked admirably, but as brown powder alone was then in vogue, it was considered necessary to use a brass case to contain the charge to prevent fouling of the powder chamber, and in order that sponging the gun might be dispensed with; hence the general adoption of the brass cartridge case for all rapid-firing guns. The advent of smokeless powder has changed the conditions, and fouling of the bore and sponging are no longer factors in the case, and the Bureau has recently designed, built, and tested a 6 inch rapid firing gun that does not require a brass cartridge case; and this will be a feature of all 6 inch rapid-firing guns hereafter. In smaller calibers, where the ammunition is complete and handled as a whole—that is, where the projectile is inserted in the case—the brass cases will be retained to facilitate rapidity of loading. The new type of 6 inch gun is 45 calibers in length and weighs 8 tons, and is designed for a muzzle velocity of 3,000 foot-seconds.

The requirements as to the physical characteristics of gun steel have been made somewhat higher than heretofore.

A set of 8 inch forgings of nickel steel has been purchased to use in conjunction with the disassembled forgings of an experimental gun of same caliber, the latter forgings having been retempered.

The small arms (6 millimeter) and machine guns (6 millimeter) in service have been put to severe tests and have given good satisfaction, especially so in view of the fact that both weapons have been but recently introduced into the service, and therefore the personnel were not thoroughly familiar with them.

Five thousand new 6 millimeter rifles and 150 Colt automatic (6 millimeter) guns have been recently procured. The Bureau is of the opi

that a uniform caliber and standard small-arm cartridge should be adopted for the Army, Navy, Marine Corps, and Militia.

While a number of smoothbore guns were prepared for service, none were put in use during the late war except such XV-inch guns as were on board the coast-defense monitors. The Bureau is convinced that it is useless to longer retain the old cast-iron smoothbore guns that are on hand in large numbers at all the navy-yards with their mounts and ammunition, and will take steps to have them surveyed with a view to disposing of them, as no contingency is likely to arise which could render them of any use whatever, and it is useless to regard them as a part of the country's naval assets.

It is gratifying to note that the various firms, companies, and individuals doing work for this Bureau in the preparation of war material showed every disposition to meet its requirements by overtime work, and by the increase of their plants when necessary, and in no instance has there been any attempt at extortion, or disposition shown to take advantage of the unusual needs of the Government, due to the war, so far as this Bureau is concerned.

The resources of the country to supply war material were scarcely touched, and unquestionably there is no limit to the amount that can be procured of all kinds, in case of need, provided time is not too important a factor.

The cruiser *New Orleans* (formerly the *Amazonas*) purchased in England from Armstrong, Mitchell & Co., appears to have given good satisfaction so far as pertains to her battery and to its arrangement. The *Topeka*, also purchased abroad, had no battery, and was fitted out by this Bureau.

The light-house vessel *Armeria*, turned over to the Bureau as an ammunition supply vessel, and under the command of Commander L. C. Logan, performed excellent service in supplying the fleet off Santiago de Cuba and elsewhere with ammunition.

The recent great increase of our naval force, by the introduction of so many new and untrained officers and men, seriously aggravated the danger of mistakes and accidents, and the urgent pressure for large outputs of ammunition and the hasty dispatch of vessels added to these chances. In spite of this, there has been a remarkable freedom from mishaps in ordnance of any nature, either afloat or ashore, as evidenced by many reports from officers on active service.

The *Vesuvius* was put in order, as far as practicable, so far as her pneumatic guns were concerned, and was fitted out with a good supply of ammunition. She fired some gun-cotton shells off Santiago de Cuba, but the Bureau has been unable to obtain any reliable data as to the execution done by them. The guns of this vessel do not represent the best efforts of the company, having a shorter range than the guns supplied to the Army. The vessel herself is not well adapted for general service, and the question of her utility must soon be considered.

Congress having appropriated for the same, a new telephone line from the Washington Navy-Yard to Indian Head is in process of construction.

Owing to the exigencies of the war, a number of minor-caliber guns and some ammunition for them, and a few torpedoes were purchased abroad, but neither powder nor projectiles for heavy guns, nor, in fact, any war material, except as above quoted, was procured by the Bureau out of the United States.

The necessity for an efficient outfit of well-equipped steam tugs and covered lighters, with power hoists and derricks, at the principal naval

stations, for ordnance purposes, has become very apparent, and steps have been taken to meet these requirements.

The Bureau is of the opinion that torpedo depots are necessary at New York, Norfolk, and San Francisco, and it will proceed with a view to establishing them.

The lack of sufficient storehouses, particularly at New York, League Island, and Norfolk, has been a source of serious inconvenience. At New York arrangements have been made which will relieve the situation; also at League Island, and the Bureau of Yards and Docks has been requested to ask for an appropriation for a new building for the use of the Ordnance Department at the Norfolk Navy-Yard.

New forms of battle order indicators have been designed for use on shipboard, and experimental sets are ordered.

No satisfactory type of range finder for ship use has yet been obtained.

While heavy guns in turrets must be regarded as one of the chief characteristics of modern battle ships, the lessons of the day indicate that the greatest execution (except against the heaviest armor) may be expected from a number of quick-firing guns of smaller caliber mounted separately in armored casemates, or in a redoubt.

The larger and heavier the gun the greater the sacrifice of space and weight to accommodate and protect it and its appurtenances, and the slower and less accurate its fire, owing to the time required to load and to its lack of mobility.

Turrets, while affording the best form of gun protection and the most extended arc of train to the gun, afford no protection to the hull; the spaces within them are necessarily contracted; the field of view from the sighting hood is limited; the heat is intense in warm climates; the ventilation imperfect, even when electric forces are used; and the machinery necessary to operate them is elaborate.

Notwithstanding these drawbacks, heavy guns in turrets must be recognized as a necessity, but the question as to the maximum caliber to be employed is a subject for serious consideration, and one upon which the Bureau has bestowed much thought.

Heretofore the 13 inch rifle of 60½ tons weight, 35 calibers in length, having a muzzle velocity of 2,400 foot-seconds, with smokeless powder, and a capacity to penetrate with a capped projectile 19 inches of face-hardened armor at a distance of 2,500 yards has been regarded as the best type for the heavy turret guns of our first-class battle ships, and all heretofore built (excepting the *Idaho*, which has 12 inch guns), have been equipped with guns of this class.

The development of the 12 inch gun has been so great and its power so much increased that the Bureau is of the opinion that hereafter it will be the maximum caliber; that it will be advisable to install on future battle ships, and that these should be supplemented by an auxiliary battery of 6 inch quick firing guns in casemates, with a secondary battery of 6 pounders and 12-pounders.

The reduction in weight of the 12 inch gun alone is not great, being but 7½ tons less than is that of the present 13-inch gun; but the reduction in the size of and consequently in the weight of the turrets, barbettes, and ammunition is very great.

The thickness of armor hereafter to be used is also under consideration. Heretofore our battle ships have carried very heavy belt, diagonal, turret, and barbette armor, more so than now appears necessary or desirable, in consideration of the improvements recently made in the quality of armor, and of the necessity of distributing protection over a

greater area of vessels' sides than has heretofore been the practice. The Bureau is therefore of the opinion that 12 inches is the maximum thickness of armor that will hereafter be required.

NAVY-YARDS AND STATIONS.

The great volume of work under this Bureau that was thrown upon the navy-yards and naval stations by the recent war was handled with dispatch and ability by the commandants, the inspectors of ordnance, and their assistants. New York, League Island, Norfolk, and Mare Island navy-yards were the most severely taxed.

At Portsmouth, N. H., the auxiliary vessels *Piscataqua* and *Frolic* were fitted out, and the *Essex* was dismantled. Considerable ammunition was put up for shipment, and thirty-six heavy guns, with equipments and ammunition, were prepared for coast defense, and a permanent air-compressing plant for the use of torpedo boats was installed.

At Boston, Mass., the following auxiliary vessels were fitted out: *Lebanon*, *Southery*, *Governor Russell*, *Oneida*, *Vulcan*. Considerable ammunition was prepared and shipped to other points, and nineteen heavy guns of old type, with ammunition and equipments, were prepared for service if needed.

The *Lancaster* was dismantled as a gunnery ship and fitted out as a station vessel for Key West.

A permanent air-compressing plant for torpedo boats was installed.

At the New York Navy-Yard the following auxiliary vessels were fitted out, viz: *Algonquin*, *Nezinscot*, *Tecumseh*, *Wasp*, *Wompatuck*, *Osceola*, *Hornet*, *Eagle*, *Sioux*, *Uncas*, *Saturn*, *Hawk*, *Mayflower*, *Harvard*, *St. Louis*, *Yankee*, *Yale*, *Prairie*, *Resolute*, *Scorpion*, *Hist*, *Restless*, *Cæsar*, *Abarenda*, *Free Lance*, *Viking*, *Gloucester*, *Aileen*, *Leonidas*, *Pompey*, *Badger*, *Scindia*, *Hannibal*, *Alexander*, *Enquirer*, *Sylvia*, *Stranger*, *Huntress*, *Elfrida*, *Siren*, *Glacier*, *Supply*, *Kanawha*, *Sterling*, *Niagara*, *Panther*, and *Buffalo*. In addition guns and ammunition were supplied to the following vessels at other stations: *Mangrove*, *Wilmot*, *Samoset*, *Morrill*, *Hamilton*, *Hudson*, *Woodbury*, *Vixen*, *Suwanee*, *Hercules*, *Windom*, *Penwood*, *St. Paul*, *Southery*, *Illawarra*, *Justin*, *Yankton*, *Potomac*, *Coyle*, *Yosemite*, *Dixie*, *Peoria*, *Dorothea*, *Vulcan*, *Comanche*, *Ice Boat No. 3*, *Wm. H. Brown*, *Calumet*, *Booth*, *Inca*, *East Boston*, *Seminole*, *Shearwater*, *Apache*, *Wompatuck*, *Yacht No. 295*, *Titania*, *Oneida*, and *Manning*.

Work of greater or less extent was also performed on the following vessels: *Cincinnati*, *Indiana*, *Brooklyn*, *Iowa*, *Massachusetts*, *Texas*, *Columbia*, *Detroit*, *Annapolis*, *Chicago*, *Montgomery*, *Marblehead*, *Helena*, *Princeton*, *Newport*, *Puritan*, *Kearsarge*, *Dolphin*, *Mayflower*, *New Orleans*, *Ericsson*, *Porter*, *Foote*, *New Hampshire*, *San Francisco*, and *Topeka*.

Guns and ammunition were also shipped to the following vessels: *Newark*, *Bancroft*, *Castine*, *Texas*, *Princeton*, *Fern*, *Morris*, *Amphitrite*, *Massachusetts*, *Indiana*, *Leyden*, *Miantonomoh*, *Lancaster*, *Dahlgren*, *Craven*, *Davis*, *Fox*, *Fish Hawk*, *Nahant*, *Cincinnati*, *McKee*, *Philadelphia*, *Farragut*, *Marblehead*, and *Dolphin*.

Large quantities of miscellaneous outfits for guns, etc., were manufactured and distributed, and this being the principal depot for receiving and shipping supplies, many thousand rounds of ammunition of all calibers were received, prepared for issue, and sent to destination.

Transportation facilities being deficient, the steamer *Right Arm* and a large covered lighter with derrick and steam hoisting gear were purchased for use of the Ordnance Department.

An air compressing plant for torpedo boats was installed, and a new ordnance machine shop was equipped with new power plant and new machinery.

At this yard forty-eight vessels were surveyed, transformed for war service, provided with batteries, ammunition and ordnance outfits, and the guns, ammunition, and outfits for forty one vessels at other yards were prepared and shipped during the ten weeks between April 15 and July 1, 1898.

During the same period the vessels already commissioned were receiving additions to their batteries, new material for old, and a large increase of their ammunition supply. These were sent to other stations by water and by rail; the latter often in solid trains to points thousands of miles distant, with the result that the needs of ships were met with great promptness. The transportation companies vied with each other in quick deliveries, and freight trains loaded with ammunition were rushed to San Francisco and Port Tampa on passenger schedules. Too much praise can not be bestowed on the Inspector of Ordnance, Commander William Swift, U. S. N., and the officers and ordnance employees at the New York Navy Yard for their diligence and efficiency.

At the League Island Navy Yard the *Vesuvius* was fitted out; also the *Columbia*, *Minneapolis*, *Katahdin*, *Miantonomoh*, *Vixen*, *Justin*, *Dorothea*, *Peoria*, *Princeton*, *Fish Hawk*, *Massasoit*, *Arctic*, *St. Paul*, *St. Louis*; also the following single turreted monitors: *Montauk*, *Nahant*, *Jason*, *Lehigh*, *Catskill*, *Mahopac*, *Manhattan*, *Ajax*, and *Canonicus* were prepared for service. Ammunition was also prepared for the monitors *Nantucket*, *Passaic*, and *Wyandotte* at other stations.

Thirteen old style guns and mounts and ammunition were prepared for use if needed, and large quantities of ammunition were received, prepared for shipment, and dispatched to other points.

The auxiliary cruiser *St. Paul* was fitted out at Cramp's shipyard, but her ammunition and ordnance outfit were prepared at League Island.

At the works of the Newport News Shipbuilding and Dry Docks Company the *Yosemite*, *Dixie*, *Yale*, and *Harrard* received their batteries, and the *Brooklyn* had new elevating gear for her 8 inch guns installed, under the cognizance of this Bureau.

At the Norfolk Navy Yard the following vessels were fitted out: *Faukon*, *Armeria*, *Maple*, *Succanet*, *Morrill*, *Hamilton*, *Windom*, *Manning*, *Hudson*, *Merrimac*, *Iris*, *Apache*, and *Cassius*. Twenty three heavy guns of old type, with ammunition and equipments, were prepared for use if needed.

At Port Royal, S. C., the *Hercules* was fitted out, an air compressing plant for the use of torpedo boats was installed, and a naval battery of four 8 inch rifles was, under the direction of Commander C. H. Rockwell, the commandant of the station, erected, with suitable platform, magazines, etc.

At Charleston, S. C., the following vessels were fitted out, viz: *Waban*, *Chickasaw*, *Cheyenne*.

Key West, Fla., having been designated as a naval base, became the point of shipment for large quantities of ammunition and ordnance supplies, much of which was shipped by rail to Port Tampa and thence by water to Key West.

The absence of proper facilities at this point and the fact that vessels of heavy draft of water could not get to the inner harbor rendered the work of supplying them with ammunition arduous in the extreme, and much credit is due to the commandant, Commander Forsyth, for

the able manner with which he performed his duty in the face of so many obstacles. An air-compressing plant for the use of torpedo boats was installed at this point. The following vessels were fitted out at this station: *Leyden*, *Samoset*, and *Mangrove*.

At Pensacola, Fla., the following vessels were fitted out: *Potomac*, *Choctaw*, *Powhatan*, *Tacoma*.

At the Mare Island Navy-Yard, Cal., the following vessels were fitted out: *City of Pekin* and *Brutus*, and at the Union Iron Works the *Fearless*, *Active*, *Vigilant*, and *Albatross*. Large quantities of ammunition and ordnance supplies were prepared and shipped to the Asiatic station; also a considerable number of gun-cotton mines, with cables, etc. At this navy-yard an ordnance machine shop, equipped with modern tools, is much needed.

SMOKELESS POWDER.

After many difficulties the manufacture of a purely smokeless powder, made by the Bureau's formula from soluble nitrocellulose dissolved in ether alcohol, uniform in character, and possessing good keeping qualities, has become an accomplished fact. Considerable quantities have already been provided and a few vessels have been given complete outfits; all vessels fitted out hereafter will, if time and money permit, be supplied exclusively with smokeless powder, except a certain number of charges of brown powder to be used for target practice, in order that the supply of the latter on hand may be used up, and because it is cheaper than smokeless powder.

The Bureau could have supplied considerable quantities of smokeless powder to various vessels during the late war, but, as owing to lack of time it was impracticable to supply complete outfits, it seemed useless to supply it in part, as a few guns using brown powder would nullify the advantages gained by the use of smokeless powder in others.

The Bureau has now in process of manufacture a large quantity and will endeavor to accumulate a sufficient supply to gradually introduce it into all vessels in the service.

Congress at its last session having appropriated a sum of money for the erection of a Government factory for the manufacture of smokeless powder, a parcel of land on the Indian Head reservation has been cleared for the purpose. An electric railroad is being built to connect the site with the proving ground, and plans have been prepared and building operations are now in progress. The establishment will consist of a laboratory and office building, boiler house, electric-power station, and buildings for the storage of cotton, picking and drying of cotton, nitrating house, pulping and poaching house, alcohol dehydrating and rectifying, mixing, pressing, and cutting powder, manufacture of ether, drying houses for powder and packing house, powder magazines, acid mixing and storehouse, nitric-acid factory, and dwellings for principal employees. The works will be operated by electric power and will embrace the most approved types of powder-making machinery. A standpipe of 300,000 gallons' capacity, supplied from artesian wells, will furnish the water supply.

The land is well situated on Mattawoman Creek, an estuary of the Potomac, being quite remote from any populous districts, and can be approached by land or by water.

TORPEDOES AND TORPEDO MATERIAL.

Torpedoes.—Since the date of the last report a contract has been concluded for fifty short Mark III Whitehead torpedoes, fitted with

Obry gears, and for twenty-five long Mark I Whitehead torpedoes, also fitted with Obry gears.

Just before the breaking out of the recent war the following-named torpedoes were purchased abroad:

Ten long 5-meter by 45-centimeter Admiralty Whitehead.

Four long 5-meter by 45-centimeter Brazilian Whitehead.

Eight short 3.55-meter by 45-centimeter Brazilian Whitehead.

Twelve Schwartzkopff.

The Brazilian torpedoes were purchased with the *New Orleans* and *Albany*.

One Schwartzkopff torpedo was picked up during the war off Santiago de Cuba by the torpedo boat *Porter*. The following torpedo material was recovered from the wrecks of the *Maria Teresa* and *Oquendo*, viz, 16 automobile torpedoes (15 Schwartzkopff and 1 Whitehead), 11 exercise heads, 10 war heads (loaded), 2 war noses with dry primers attached.

The following table gives the number of torpedoes in service, lost or damaged beyond repair, on hand at yards and stations, required for ships and boats to complete outfits, and the reserve remaining available for issue:

Torpedoes and torpedo material.

	Howell.		Whitehead.							Schwartzkopff.	Total.
	Mark I, 14.3".	Mark I, 13'.	Mark I, 3.55 m. by 45 cm.	Mark II, 3.55 m. by 45 cm.	Mark III, 3.55 m. by 45 cm.	Mark I, 5 m. by 45 cm.	Admiralty, 5 m. by 45 cm.	Brazilian, 5 m. by 45 cm.	Brazilian, 3.55 m. by 45 cm.		
Contracted for or ordered	50	1	100	50	100	125	10	4	3	13	470
In service on ships or boats	10	0	74	47	13	0	0	0	0	0	144
Lost or damaged beyond repair	8	0	15	3	0	0	0	0	0	0	26
Assigned as outfits of ships and boats or for instruction	2	0	2	0	64	276	0	0	0	0	144
In reserve for issue when required.....	30	1	9	0	22	49	10	4	3	13	156

^a This item does not include 88 long 5-meter Whitehead torpedoes required to outfit the 3 battle ships and 16 torpedo-boat destroyers appropriated for by the last Congress.

All torpedoes now being manufactured are to be fitted with Obry gears, and these are now functioning well in service.

Some experiments with the Cunningham rocket torpedo, carried on by the inventors, were witnessed by a board of officers from the torpedo station. These experiments resulted in complete failure. Three of the torpedoes, weighing about 930 pounds each, were successfully launched from an under-water tube rigged in the bow of a schooner, but their performance was most erratic. The fourth exploded within the tube, wrecking and sinking the schooner. Fortunately no person was injured.

Torpedo-launching apparatus.—Since last report thirty-eight additional 5-meter central pivot tubes and mounts have been ordered for the torpedo-boat destroyers.

In the future no more torpedo tubes will be placed on board the unarmored cruisers, and in the case of armored cruisers and battle ships under-water discharge tubes alone will be installed.

A design of under-water tube has been adopted for use in the new battle ships, and preliminary work has already begun at the Naval Gun Factory for the manufacture of the requisite number.

Just prior to the recent war the Howell bow and stern tubes previously removed from cruisers were converted into central pivot tubes,

and mounts were built for these, eleven in all. These, with two other central pivot Howell tubes, are held in reserve.

There were also purchased from abroad six Schwartzkopff central pivot tubes and mounts, including two purchased with the torpedo boat *Sommers*, which are also held in reserve.

Air compressors.—During the past year twenty-nine air compressors have been purchased. It is believed that considerable improvement can be made in these machines, and a new design for both ships and boats has been selected, and one of each kind will be thoroughly tested.

NAVAL MAGAZINES.

While within the past two years these important establishments have received considerable attention and have been much improved, especially at Philadelphia and Norfolk, the recent war has accentuated the necessity of increased magazine facilities at the principal naval stations.

At Portsmouth, N. H., the magazines and shell houses, though small, are in excellent condition; the wharves requiring moderate repairs have been put in good order.

At Boston, Mass., the buildings were much out of repair, but a contract has been made, and the work is now in progress of putting a new roof on the main magazine, new floor, and improving its ventilation. The shell houses are being put in order and a new watchhouse is being built and the magazine grounds have been inclosed by a high fence.

At New York, Fort Lafayette has been improved to meet the urgent demands of this station. Open spaces have been roofed over, casemates converted into magazines, filling house and watchmen's quarters erected, wharf extended, channel dredged, and steam plant put in for power and heat. These alterations and improvements enabled the Bureau to carry on with dispatch the great volume of work devolving upon this station, but the need of a thoroughly first-class magazine, with abundant space for present needs and room for future expansion, is more apparent than ever. The arrival of several battle ships and large cruisers, all to have their ammunition, amounting to many hundred tons, removed before docking, has seriously taxed the resources of this establishment. A board appointed by the Department's order to select, if possible, a suitable magazine site near New York is now in session for that purpose.

The magazine at Dover, N. J., is in good condition and most useful for the storage of reserve ammunition. Two additional filling houses have been erected at this point to meet the exigencies of the situation, and a railroad siding of about 800 feet in length has been completed.

At League Island the magazines are in good condition. An additional piece of land adjoining the present site has been secured by transfer from the War Department, and steps are now being taken to erect the additional buildings and fire plant and to extend the railroad facilities, for which money was appropriated at the last session of Congress. When completed, these improvements should be sufficient to meet the requirements of this station for many years.

At St. Juliens Creek, Norfolk, Va., the magazines are in excellent condition, but inadequate in size and number for this important station. A large temporary filling house was erected at this point to meet the exigencies of the situation, and, an allotment having been made for the purpose, three new buildings for magazines, fire plant, and stable are about to be contracted for, and an item has been included in the annual

estimates for an additional strip of land in order to extend the boundary line to a point more remote than at present from the buildings. Contract has been made for inclosing the grounds with a high fence.

At Mare Island Navy-Yard, Cal., the magazines are in good condition, but to afford the necessary facilities a temporary filling house was recently erected at that point.

The niter depot at Malden is in fairly good condition. During the past six months the Bureau has supplied about 1,500 tons of saltpeter to the powder manufacturers from this depot.

ARMOR.

In consequence of the limitation placed by Congress as to the price that might be paid for armor, the Department was debarred from making contracts for armor for battle ships *Alabama*, *Illinois*, and *Wisconsin* until one year and nine months after the vessels themselves had been contracted for, as no bids could be obtained for armor within the limit of cost allowed. When, by subsequent action, Congress raised the limit of cost from \$300 to \$400 per ton, contracts were made in June last, for armor for the above vessels, deliveries to begin in December next and to continue at the rate of 300 tons per month from each company until contracts are completed. This delay in contracting for the armor until so long a period after the vessels had been contracted for was unfortunate, as it prevents the Bureau from supplying the armor as promptly as the shipbuilders require it.

The total weight of armor required for the three vessels referred to has been divided equally, as nearly as practicable, between the two only armor manufacturers in this country, each making the entire armor for one ship and that for the third being divided between the two.

All the armor for the *Kearsarge* and *Kentucky* has been delivered, with the exception of the shutter plates, which can not be machine finished until all other plates are in place, which depends on the progress made by the shipbuilders.

The armor for the *Alabama*, *Illinois*, and *Wisconsin* is advanced far beyond the requirements of the contract, and deliveries will begin much in advance of the stipulated time.

Of armor there has been delivered, during the year, for the *Kearsarge*, 1,057 tons; for the *Kentucky*, 1,040 tons; for the *Illinois*, *Alabama*, and *Wisconsin* (each 35 tons), 105 tons; this latter being the diagonal for these ships, and was furnished by the ship contractors last winter at the then allowed legal rate of \$300 per ton.

The armor now under contract for each of these three latter ships is 2,559 tons.

No armor has yet been contracted for for the battle ships *Maine*, *Missouri*, and *Ohio*, nor for the four harbor defense monitors authorized by the last Congress.

Considerable improvement has been made in the method of face-hardening armor, as applied to experimental plates, and the Bureau has tested one of 6 inches in thickness and another 11½ inches in thickness, submitted by the manufacturers, both of which showed excellent qualities somewhat in excess of plates previously presented which had been treated by other processes.

There is but little doubt that armor of superior quality to that previously used can be manufactured, resulting in a considerable saving of weight which now has to be assigned for protection in armored vessels.

The armor-factory board, appointed by the Department since the date of the Bureau's last report, has submitted an exhaustive report on the subject of manufacturing armor, with a view to the establishment of a Government factory, but no further steps have been taken looking toward the erection of such a factory.

NAVAL PROVING GROUND.

This establishment is still in charge of Commander A. R. Couden, U. S. N., whose excellent services entitle him to the Bureau's commendation. With but little official assistance at any time, and with none whatever at times, he has carried on the exacting and varied duties devolving upon him with promptness, discretion, and ability. The work of the past year has been almost exclusively that of proving guns and mounts and tests of powder and projectiles. The large contracts of both of the latter now in hand call for much work. There have been no failures in guns proved at this station. Improvements have been made in extending the sea wall, in constructing a new bomb proof, and in the means of utilizing mechanical power. The report of the officer in charge is appended hereto.

The erection of a smokeless-powder factory on the proving-ground reservation will increase its importance. The work is now in progress and is referred to in another part of this report.

NAVAL GUN FACTORY.

This important establishment is under the efficient and immediate charge of Commander E. C. Pendleton, U. S. N., the superintendent, and until the outbreak of the recent war was engaged upon the current work of manufacturing the guns, mounts, and outfits for new vessels, etc., carrying on its work eight hours a day. As soon as war became imminent, and until a few weeks ago, it has been operated continuously, turning out guns, mounts, and equipments for auxiliary vessels, and pushing to completion the batteries, etc., for new vessels. Rapid progress was made, enabling the Bureau to supply modern batteries to all auxiliary vessels placed in commission with such dispatch that no delay was caused by lack of armament. An immense amount of work, and in great detail, has been accomplished, as is shown in the interesting report of the superintendent herewith. The present authorized increase of the Navy, to be undoubtedly followed by a still further expansion, renders it necessary that the facilities of this establishment should keep pace with the probable requirements of the Department. The shops are greatly overcrowded, impeding the progress of work, and from time to time additional buildings should be erected and equipped with machinery. An allotment has been made for a new and much-needed machine shop for miscellaneous purposes, and very rapid progress is being made in its construction. A storehouse for guns is being erected, but owing to the large accumulation growing out of the recent war its capacity will be inadequate to meet the necessities of the situation, and an allotment has been requested to double its length.

A new packing and shipping house is also urgently needed.

Some projected improvements have been made, and others are in process. New galleries and overhead crane supports will soon be erected in the erecting shop. A new electric overhead traveling crane has been installed in the east gun-carriage shop, and has relieved the situation very much as to handling material. Two additional boilers

are being added to the central power plant. The copper-rolling mill has been cleaned out of its antiquated machinery, and is being prepared for the reception of cartridge case making machinery, all of which has been ordered, and is in an advanced state. The breech-mechanism shop should have its walls buttressed and raised in height and a new roof put on. The north gun shop should be extended to the north to give additional floor space under the 100-ton crane. The Bureau of Yards and Docks has funds to put a new roof on the south gun shop, and the work will soon be in hand. Owing to the exigencies of the war, most of the officers on the active list were detached and ordered to sea, and their places were filled by retired officers, who performed their duties with great fidelity and diligence. In all probability the use of steam power as now applied to shattering driven by belts will soon be superseded by electric power, and the new machine shop being built will have all its machinery driven by electric motors. The Bureau also favors the construction, on a moderate scale, of a plant for making small steel castings and is working in that direction. The character and cost of the work turned out at the Naval Gun Factory reflects great credit on officers, men in charge, and on the employees, and it is doubtful if a better set of mechanics can be found in the country than those there employed.

TORPEDO STATION.

This station is still under the immediate and efficient charge of Lieut. Commander T. C. McLean, U. S. N. It has been engaged in the preparation of torpedoes and outfits for vessels and boats, submarine mines and their appurtenances; in the manufacture of fuses and primers, electric firing outfits, and numerous other details specially pertaining to the station.

Instruction and practice work with torpedoes, explosives, and various ordnance appliances and apparatus have been continued at the station during the year, and the manufacture of extra supplies was pushed to the full capacity of the plant.

Descriptions of torpedoes and other materials and instructions for care and handling were prepared or revised and extended, and issued for use with the material.

Special instruction has been given to officers who have been ordered to the station for that purpose.

Officers and crews of torpedo boats which were sent to the station for armament and outfits received practical instruction in the care and handling of their torpedoes and assistance in target practice.

The course of instruction for seamen gunners has been carried on as regularly as possible, being instructed in diving, in the care and management of high speed engines, dynamos, search lights, and care and repair of torpedoes, and in the practical work of preparing and launching torpedoes. The number of men under instruction during the year was sixty four.

During the year Whitehead torpedoes and outfits were supplied to the following torpedo boats, viz: *Porter*, *Dupont*, *Foote*, *Winslow*, *Rodgers*, *Rowan*, *Gwin*, *Talbot*, *Morris*, *McKee*, and *Farragut*, and the following vessels, viz: *Columbia*, *Minneapolis*, *Mayflower*, and *New Orleans*. Seventy one torpedoes have been supplied to vessels, boats, and to stations.

In addition, the torpedoes and outfits are now ready for torpedo boats *Mackenzie*, *Davis*, and *For*.

A set of plans for a smokeless powder factory, with specifications for buildings and machinery, was prepared at the station.

The manufacture of smokeless-powder for various caliber guns has been carried on, and much experimental and analytical work has been performed in the laboratory.

Numerous experiments have indicated the desirability of radical changes in nearly every step of the process of the manufacture of nitro-cellulose for smokeless powder. As a result of these changes the process has been much simplified, the expense has been reduced, and the product is of greater uniformity and perfect stability.

A great improvement has been made in the method of purification of nitrocellulose, and the material so purified has proven to be a most excellent material for use in the manufacture of smokeless powder. The nitration has been uniform and complete, and its stability has been perfectly maintained.

Some interesting experiments with liquid fuel have been carried out on board the torpedo boat *Stiletto*.

Alterations and improvements have been made to the quarters of seamen gunners.

Two new boilers have been installed in the boiler house, the sea wall has been extended, and the general condition of the buildings, grounds, boats, wharves, etc., is good. The report of the inspector of ordnance in charge is appended.

The officers and civil force on ordnance duty at the various navy-yards and stations and in the Bureau, and the inspectors at private works have been severely taxed, and have all rendered valuable service and been zealous and diligent in the performance of their duties, and such success as the Bureau has been able to achieve during the past year in its various operations is largely due to their efficient aid.

The following papers accompany this report:

A.—Detailed estimates for the fiscal year ending June 30, 1900.

B.—Annual report of the superintendent of the Naval Gun Factory.

C.—Annual report of the inspector of ordnance in charge of the Naval Torpedo Station, Newport, R. I.

D.—Annual report of the inspector of ordnance in charge of the Naval Proving Ground, Indian Head, Md.

Respectfully,

CHARLES O'NEIL,
Chief of Bureau of Ordnance.

The SECRETARY OF THE NAVY.

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REPORT OF THE CHIEF OF THE BUREAU OF CONSTRUCTION AND REPAIR.

NAVY DEPARTMENT,
BUREAU OF CONSTRUCTION AND REPAIR,
Washington, September 24, 1898.

SIR: In obedience to the Department's instructions, I have the honor to submit herewith a report of the work done under the cognizance of this Bureau during the fiscal year ending June 30, 1898, and also submit estimates for appropriations required for the fiscal year ending June 30, 1900.

The estimate marked A is for the salaries of employees in the Bureau.

The estimate marked B is for the general repair of vessels at navy-yards and on foreign stations, purchase of stores, materials, machinery, tools of all kinds, preservation of machinery and stores, and for the

proper performance of all work not otherwise provided for under the cognizance of this Bureau.

The estimates marked B Special are for the improvement of construction plants at the several navy-yards and naval stations.

The estimates marked B 1 Special is for the commencement of repairs to the U. S. S. *Constitution* ("Old Ironsides"), to fit her for use as a training ship.

The estimates marked C are for the pay of such clerks and writers at the several navy-yards as are indispensable for the proper and systematic prosecution of the work.

The estimates marked D are for continuing the work on hulls and outfits of vessels in course of construction.

ESTIMATES, APPROPRIATION CONSTRUCTION AND REPAIR, 1899-1900.

Estimates of the appropriations required for the fiscal year ending June 30, 1900, by the Bureau of Construction and Repair, Navy Department.

Detailed objects of expenditures and explanations.	Estimated amount required for each detailed object.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for current fiscal year ending June 30, 1899.
A. Salaries.			
Chief clerk (appropriated)	\$1,800.00		
Increase of pay to \$2,000 (submitted)	200.00		
One draftsman (appropriated).....	1,800.00		
(One assistant draftsman (appropriated).....	1,400.00		
One clerk of class 3 (appropriated).....	1,600.00		
Increase of pay to \$1,800, class 4 (submitted).....	200.00		
One clerk of class 3 (appropriated).....	1,600.00		
One clerk of class 2 (submitted).....	1,400.00		
Two clerks of class 1, at \$1,200 each (appropriated).....	2,400.00		
Four clerks of class 1 (two of whom shall be competent stenographers), at \$1,200 each (submitted) a.....	4,800.00		
One assistant messenger (appropriated).....	720.00		
One laborer (appropriated)	600.00		
		\$18,580	\$11,980
B. Construction and repair of vessels.			
For preservation and completion of vessels on the stocks and in ordinary; purchase of materials and stores of all kinds; steam steerers, pneumatic steerers, steam capstans, steam windlasses, and all other auxiliaries; labor in navy-yards and on foreign stations; purchase of machinery and tools for use in shops; carrying on work of experimental model tank; designing naval vessels; wear, tear, and repair of vessels afloat; general care, increase, and protection of the Navy in the line of construction and repair; incidental expenses, such as advertising, freight, foreign postage, telegrams, telephone service, photographing, books, professional magazines, plans, stationery, and instruments for drafting room (appropriated, act of May 4, 1898)	3,000,000.00	3,000,000	2,500,000
Appropriated by deficiency act, July 7, 1898, for six months beginning July 1, 1898			7,450,000
B. Special—Improvement of construction plants.			
For repairs to, and improvement of, plant at navy-yard, Portsmouth, N. H. (appropriated).....	25,000.00	25,000	50,000
For repairs to, and improvement of, plant at navy-yard, Boston, Mass. (appropriated)	25,000.00	25,000	50,000
For repairs to, and improvement of, plant at navy-yard, New York, N. Y. (appropriated)	25,000.00	25,000	50,000
For repairs to, and improvement of, plant at navy-yard, League Island, Pa. (appropriated)	25,000.00	25,000	50,000
For repairs to, and improvement of, plant at navy-yard, Norfolk, Va. (appropriated).....	25,000.00	25,000	50,000
(Appropriated, act May 4, 1898.)			

a These clerks are now employed in the Bureau and paid out of the appropriation "Increase of the Navy."

The manufacture of smokeless-powder for various caliber guns has been carried on, and much experimental and analytical work has been performed in the laboratory.

Numerous experiments have indicated the desirability of radical changes in nearly every step of the process of the manufacture of nitrocellulose for smokeless powder. As a result of these changes the process has been much simplified, the expense has been reduced, and the product is of greater uniformity and perfect stability.

A great improvement has been made in the method of purification of nitrocellulose, and the material so purified has proven to be a most excellent material for use in the manufacture of smokeless powder. The nitration has been uniform and complete, and its stability has been perfectly maintained.

Some interesting experiments with liquid fuel have been carried out on board the torpedo boat *Stiletto*.

Alterations and improvements have been made to the quarters of seamen gunners.

Two new boilers have been installed in the boiler house, the sea wall has been extended, and the general condition of the buildings, grounds, boats, wharves, etc., is good. The report of the inspector of ordnance in charge is appended.

The officers and civil force on ordnance duty at the various navy-yards and stations and in the Bureau, and the inspectors at private works have been severely taxed, and have all rendered valuable service and been zealous and diligent in the performance of their duties, and such success as the Bureau has been able to achieve during the past year in its various operations is largely due to their efficient aid.

The following papers accompany this report:

A.—Detailed estimates for the fiscal year ending June 30, 1900.

B.—Annual report of the superintendent of the Naval Gun Factory.

C.—Annual report of the inspector of ordnance in charge of the Naval Torpedo Station, Newport, R. I.

D.—Annual report of the inspector of ordnance in charge of the Naval Proving Ground, Indian Head, Md.

Respectfully,

CHARLES O'NEIL,
Chief of Bureau of Ordnance.

The SECRETARY OF THE NAVY.

* * * * *

REPORT OF THE CHIEF OF THE BUREAU OF CONSTRUCTION AND REPAIR.

NAVY DEPARTMENT,
BUREAU OF CONSTRUCTION AND REPAIR,
Washington, September 24, 1898.

SIR: In obedience to the Department's instructions, I have the honor to submit herewith a report of the work done under the cognizance of this Bureau during the fiscal year ending June 30, 1898, and also submit estimates for appropriations required for the fiscal year ending June 30, 1900.

The estimate marked A is for the salaries of employees in the Bureau.

The estimate marked B is for the general repair of vessels at navy-yards and on foreign stations, purchase of stores, materials, machinery, tools of all kinds, preservation of machinery and stores, and for the

proper performance of all work not otherwise provided for under the cognizance of this Bureau.

The estimates marked B Special are for the improvement of construction plants at the several navy-yards and naval stations.

The estimates marked B 1 Special is for the commencement of repairs to the U. S. S. *Constitution* ("Old Ironsides"), to fit her for use as a training ship.

The estimates marked C are for the pay of such clerks and writers at the several navy-yards as are indispensable for the proper and systematic prosecution of the work.

The estimates marked D are for continuing the work on hulls and outfits of vessels in course of construction.

ESTIMATES, APPROPRIATION CONSTRUCTION AND REPAIR, 1899-1900.

Estimates of the appropriations required for the fiscal year ending June 30, 1900, by the Bureau of Construction and Repair, Navy Department.

Detailed objects of expenditures and explanations.	Estimated amount required for each detailed object.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for current fiscal year ending June 30, 1899.
A. Salaries.			
Chief clerk (appropriated)	\$1,800.00		
Increase of pay to \$2,000 (submitted)	200.00		
One draftsman (appropriated)	1,800.00		
One assistant draftsman (appropriated)	1,400.00		
One clerk of class 3 (appropriated)	1,600.00		
Increase of pay to \$1,800, class 4 (submitted)	200.00		
One clerk of class 3 (appropriated)	1,600.00		
One clerk of class 2 (submitted)	1,400.00		
Two clerks of class 1, at \$1,200 each (appropriated)	2,400.00		
Four clerks of class 1 (two of whom shall be competent stenographers), at \$1,200 each (submitted) a	4,800.00		
One assistant messenger (appropriated)	720.00		
One laborer (appropriated)	600.00		
		\$18,580	\$11,980
B. Construction and repair of vessels.			
For preservation and completion of vessels on the stocks and in ordinary; purchase of materials and stores of all kinds: steam steerers, pneumatic steerers, steam capstans, steam windlasses, and all other auxiliaries; labor in navy-yards and on foreign stations; purchase of machinery and tools for use in shops; carrying on work of experimental model tank; designing naval vessels; wear, tear, and repair of vessels afloat; general care, increase, and protection of the Navy in the line of construction and repair; incidental expenses, such as advertising, freight, foreign postage, telegrams, telephone service, photographing, books, professional magazines, plans, stationery, and instruments for drafting room (appropriated, act of May 4, 1898)	3,000,000.00	3,000,000	2,500,000
Appropriated by deficiency act, July 7, 1898, for six months beginning July 1, 1898			7,450,000
B. Special—Improvement of construction plants.			
For repairs to, and improvement of, plant at navy-yard, Portsmouth, N. H. (appropriated)	25,000.00	25,000	50,000
For repairs to, and improvement of, plant at navy-yard, Boston, Mass. (appropriated)	25,000.00	25,000	50,000
For repairs to, and improvement of, plant at navy-yard, New York, N. Y. (appropriated)	25,000.00	25,000	50,000
For repairs to, and improvement of, plant at navy-yard, League Island, Pa. (appropriated)	25,000.00	25,000	50,000
For repairs to, and improvement of, plant at navy-yard, Norfolk, Va. (appropriated)	25,000.00	25,000	50,000
(Appropriated, act May 4, 1898.)			

a These clerks are now employed in the Bureau and paid out of the appropriation "Increase of the Navy."

Estimates of the appropriations required for the fiscal year, etc.—Continued.

Detailed objects of expenditures and explanations.	Estimated amount required for each detailed object.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for current fiscal year ending June 30, 1899.
B. Special—Improvement of construction plants—Cont'd.			
For repairs to, and improvement of, plant at navy-yard, Pensacola, Fla. (submitted)	\$25,000.00	\$25,000	.....
For repairs to, and improvement of, plant at navy yard, Mare Island, Cal. (appropriated)	25,000.00	25,000	\$50,000
(Appropriated, act May 4, 1898.)			
For repairs to, and improvement of, plant at naval station, Port Royal, S. C. (appropriated)	25,000.00	25,000	.....
(Appropriated, act Mar. 3, 1897.)			
For repairs to, and improvement of, plant at naval station, Key West, Fla. (submitted)	25,000.00	25,000	.....
For repairs to, and improvement of, plant at Puget Sound Naval Station, Washington (appropriated)	25,000.00	25,000	25,000
(Appropriated, act May 4, 1898.)			
B 1. Special—Repairs to Constitution.			
For commencement of repairs to the U. S. S. Constitution, to fit her for use as a training ship (submitted)	150,000.00	150,000	.....
C. Civil establishment.			
At navy-yard, Portsmouth, N. H.:			
One clerk to naval constructor (appropriated)	1,400.00		
Two writers, at \$1,017.25 each (appropriated)	2,034.50		
At navy-yard, Boston, Mass.:			
One clerk to naval constructor (appropriated)	1,400.00		
One writer, at \$1,017.25 (appropriated)	1,017.25		
At navy-yard, New York, N. Y.:			
One clerk to naval constructor (appropriated)	1,400.00		
Three writers, at \$1,017.25 each (appropriated)	3,051.75		
At navy-yard, League Island, Pa.:			
One clerk to naval constructor (appropriated)	1,400.00		
One writer, at \$1,017.25 (appropriated)	1,017.25		
At navy-yard, Washington, D. C.:			
One clerk to naval constructor (appropriated)	1,400.00		
At navy-yard, Norfolk, Va.:			
One clerk to naval constructor (appropriated)	1,400.00		
Two writers, at \$1,017.25 each (appropriated)	2,034.50		
At naval station, Port Royal, S. C.:			
One clerk to naval constructor (appropriated)	1,400.00		
At navy-yard, Pensacola, Fla.:			
One writer, at \$1,017.25 (appropriated)	1,017.25		
At navy-yard, Mare Island, Cal.:			
One clerk to naval constructor (appropriated)	1,400.00		
Two writers, at \$1,017.25 each (appropriated)	2,034.50		
		32,407	32,407
D. Increase of the Navy Construction and machinery.			
On account of hulls and outfits of vessels and steam machinery of vessels heretofore authorized	5,992,402.00	5,992,402	12,642,473
(See joint letter below.)			

WASHINGTON, August 30, 1898.

SIR: We have the honor to submit herewith, in duplicate, joint estimates (inclosures Nos. 1 and 2) of the amounts required by the bureaus of Construction and Repair and Steam Engineering, under appropriation "Increase of the Navy, construction and machinery," for work on new vessels authorized by Congress, to June 30 1900, as per statements in detail herewith (inclosures Nos. 3 and 4), viz:

Sheet D.

Under Bureau of Construction and Repair:

For fiscal year 1898-99 \$5,155,744

For fiscal year 1899-1900 7,465,908

Total..... \$12,621,652

Under Bureau of Steam Engineering:

For fiscal year 1898-99	\$3, 587, 992
For fiscal year 1899-1900	4, 144, 246
Total.....	\$7, 732. 238
Aggregate	20, 353, 888
Balance in Treasury available for above July 1, 1898 (less the sum of \$260,000 for one gunboat to take the place of the <i>Michigan</i> on the Great Lakes, authorized by act approved May 4, 1898, said vessel to be built as soon as permitted under treaty)	14, 361, 486
Appropriation required for fiscal year 1899-1900.....	5, 992, 402

This amount, \$5,992,402, is the estimated amount required to be appropriated for work on new vessels authorized by Congress for "Increase of the Navy, construction, and machinery," for the fiscal year ending June 30, 1900.

Very respectfully,

PHILIP HICHBORN,
Chief Constructor, U. S. N., Chief of Bureau.
 GRO. W. MELVILLE,
Engineer in Chief, U. S. N., Chief of Bureau.

In the above figures it will be noted that the estimated requirements under Class B, "Construction and repair of vessels," have been placed at \$3,000,000, being an increase of \$500,000 over the amount appropriated for the fiscal year ending June 30, 1899. This is a moderate increase, considering the probable demands upon the appropriation, due to the enlarged number of naval vessels in commission, besides such auxiliary vessels as may be retained in active service.

In the estimates for the present fiscal year, submitted with the Bureau's report of last year, certain funds were requested for the specific purpose of improving the efficiency of navy-yard plants. In submitting these estimates the Bureau was careful to point out the urgency for the appropriation, quoting extracts from naval constructors' reports, in connection therewith, to show that the amount asked for would cover only a portion of the essential improvements.

In the act approved May 4, 1898, Congress appropriated funds for this purpose, as estimated, except in the case of the Puget Sound naval station (reduced to \$20,000), and no doubt realized fully the necessity for their expenditure.

The funds made available have been or are being expended as advantageously as possible, but the necessity for continued improvement and maintenance, especially under the present increased demands on navy yards as above pointed out, must be evident. Moreover, recent events have emphasized the desirability of placing the smaller stations on an efficient basis for the prompt execution of such repairs as may be necessary.

The Bureau, therefore, includes in its estimates, marked B 1 special, the sum of \$250,000 for repairs and improvements to navy-yard plants, being \$25,000, or half the amount estimated last year, to be applied to each of the navy yards at Portsmouth, Boston, New York, League Island, Norfolk, Port Royal, Key West, Pensacola, Mare Island, and Puget Sound.

Extracts from the reports of naval constructors, covering the present requirements of the several stations, are again quoted in the latter part of this report.

DEVELOPMENT OF THE MINOR NAVAL STATIONS.

Attention is invited to the importance of properly equipping and maintaining the plants at the minor naval stations along the coast of

the United States, already established. With the very great extent of coast line, with the prospect of additional outlying possessions and the accompanying increased importance of our foreign relations and of the Navy, these stations, separated as they are, may develop into considerable importance at any time. Had the consequences of the recent engagements in the West Indies been nearly so serious as there was reason to expect they might be, the stations on the Southern and Gulf coasts would have been required for active repairs on vessels which it would have been impracticable to send to Northern yards.

The first cost of equipping a moderate plant at each of these stations would not be excessive. The principal drawbacks to their efficient maintenance are caused by their location relative to shipbuilding centers. Work similar to that which is required at navy-yards is not carried on in their vicinity, and mechanics can not be obtained in many cases except from the North. Moreover, skilled mechanics can not be satisfactorily obtained in that manner at ordinary rates of pay, owing to the uncertainty as to the probable duration of their employment, about which no assurance can be given. In addition to this, material is difficult to obtain, particularly with any degree of promptitude. Intelligent and reliable contractors hesitate to ship goods such a distance with the uncertainty attending their acceptance. Rates are often difficult to obtain, and shipments frequently delayed en route.

If these stations are to be maintained in a condition ready for work at all times the first difficulty should be met by an effort to keep the plants constantly employed on a small amount of general work in order that a suitable force may be on hand in the event of an emergency. To meet the second difficulty proper storehouses should be erected where necessary and suitable material in sufficient quantity should be kept on hand. The question of supplies will be referred to more in detail further on in this report.

In connection with the subject of minor naval stations, it is suggested that proper steps should be taken to install a suitable plant and storehouses in connection with the floating dock to be located at Algiers, La., and that such work should be carried on concurrently with the construction of said dock.

SUPPLIES FOR NAVY-YARD WORK.

As stated above, an important factor in the prompt and efficient execution of work at navy-yards and stations is the prompt procurement of supplies required to carry on work. This matter particularly affects the smaller yards, work in some cases being delayed months on account of the nonreceipt of material.

While the extension of the naval supply fund, resulting from the appropriation for that purpose, has improved the conditions in this regard and enabled the naval constructors to procure many of the supplies necessary in carrying on their work, the press of work brought about by recent conditions has emphasized the desirability of some changes in the method of purchase of supplies not obtainable from it. The Bureau recommends the extension of large contracts for material under the naval supply fund and the maintenance of a considerable stock of imperishable supplies under this fund at all yards. Revised stock lists should be prepared for each yard and carefully maintained within limits to be determined upon. The matter of properly maintaining the stock under the naval supply fund should be considered as an important one.

There are many articles required in carrying out work upon ships which, from their special nature, the infrequent demand for them, or other reasons, are not to be had from the naval supply fund, and the necessity for which can not, for similar reasons, be anticipated. Experience shows that, with the method of purchase usually followed, orders for such material are not placed until at least five days, and are sometimes delayed for several weeks, after the requisition has left the office of the naval constructor, and the records show that in limiting the time of delivery of articles, attention can not be paid to the memorandum upon the requisition, stating when the goods are required. This, combined with the frequent failure of the contractors to deliver in the time specified, causes great inconvenience and delay in carrying out the work for which the material is required.

The Bureau is of the opinion that a purchase system which occasions great inconvenience and delay, and the concomitant increase in cost of carrying out work in time of peace, and which places the execution of orders in the hands of middlemen or agents who in very many cases have absolutely no knowledge of the goods they are contracting to furnish, should give place to a system which will insure the placing of the order with those who have the desired material on hand for prompt delivery, and who understand the needs of the user so fully as to meet them without the necessity of frequent rejections; and which will, furthermore, effect an economy such as must necessarily result from the prompt and efficient execution of work.

In regard to material for the smaller naval stations, removed from the markets concerned—which is, as a rule, purchased by the pay officer attached to the station—much time is lost in correspondence, in the difficulties attached to obtaining satisfactory bids, in deliveries over various systems of railroads, etc. Such material could in many cases be obtained at lower rates, and more promptly, by purchase and inspection in the North, followed by shipment in a Government transport.

VESSELS PURCHASED.

The war in which the country is engaged necessitated the purchase of a large number of vessels for addition to the fighting force of the Navy and for auxiliary purposes incidental to a state of war. There is given in the table below a list of these, with their former and present names, date of purchase, and name of previous owner. Further information in regard to these vessels will be found in the "Table of vessels," forming a part of this report.

VESSELS PURCHASED.

Name before purchase.	Renamed.	Date of purchase.	Previous owners.
Columbia.....	Wasp.....	Mar. 26, 1898	J. H. Ladew.
Alicia.....	Hornet.....	Apr. 6, 1898	Henry M. Flagler.
Almy.....	Eagle.....	Apr. 2, 1898	Frederick Gallitin.
Hermione.....	Hawk.....	.....do.....	Henry L. Pierce estate.
D. C. Evans.....	Nezinscot.....	Mar. 25, 1898	Moran & Co.
P. H. Wise.....	Sioux.....	Mar. 26, 1898	Do.
Winthrop.....	Osceola.....	Mar. 31, 1898	Staples Coal Co.
El Toro.....	Accomac.....	Mar. 26, 1898	Southern Pacific Line.
Wilmet.....	Potomac.....	Apr. 14, 1898	Ocean Towing and Wrecking Co.
Edward Luckenback.....	Tecumseh.....	Apr. 2, 1898	Luckenback & Co.
Walter A. Luckenback.....	Uncas.....	.....do.....	Do.
Atlas.....	Wampatuck.....	Apr. 4, 1898	Standard Oil Co.
Josephine.....	Vixen.....	Apr. 9, 1898	T. A. B. Widener.
Mayflower.....	Mayflower.....	Mar. 19, 1898	Ogden Goellet estate.

VESSELS PURCHASED—Continued.

Name before purchase.	Renamed.	Date of purchase.	Previous owners.
Sovereign	Scorpion	Apr. 7, 1898	M. C. D. Borden.
Creole	Solace	do	Crumwell S. S. Line.
Diogenes	Topeka	Apr. 2, 1898	Thames Iron Works (London)
(Not named)	Manly	Apr. 12, 1898	Chas. K. Flint.
Do	Somers	Mar 26, 1898	Schichau Works, Elbing, Germany
Saturn	Saturn	Apr 2, 1898	The Boston Towboat Co
Lebanon	Lebanon	Apr 8, 1898	Philadelphia and Reading R. R. Co
El Norte	Yankee	do	Southern Pacific Co.
El Rio	Dixie	Apr. 15, 1898	Southern Pacific Co.
El Sol	Prairie	Apr. 8, 1898	Do.
El Sud	Yosemite	do	Do.
Nietheroy	Buffalo	July 11, 1898	Braslian Government.
Amazonas	New Orleans	Mar 18, 1898	Do.
Almirante Abreu	Albany	do	Do.
Merrimac	Merrimac	Apr. 12, 1898	Hogan Line.
Niagara	Niagara	Apr 11, 1898	Ward Line S. S. Co.
Sterling	Sterling	Apr 16, 1898	Black Diamond Transportation Co.
Enterprise	Modoc	Apr 29, 1898	American Towing Co.
No 18	No 18	Apr. 18, 1898	Philadelphia Transportation and Lighting Co.
Nashua	Nashua	Apr 8, 1898	Frank Smythe.
Zafiro	Zafiro	Apr 9, 1898	China and Manila S. S. Co.
Alice	Alice	Mar 26, 1898	John M. Worth.
St Paul	St Paul	Chartered.	International Navigation Co.
St. Louis	St. Louis		Do.
New York	Harvard		Do.
Paris	Yale		Do.
C. G. Coyle	Choctaw	Apr 19, 1898	W G Coyle.
Penwood	Powhatan	Apr. 8, 1898	Walsh & Doran.
Fearless	Iroquois	Apr. 18, 1898	J. D. Sprockels Bros. Co.
Vigilant	Vigilant	Apr 19, 1898	Do.
Active	Active	Apr 18, 1898	Do.
Hercules	Hercules	Apr 26, 1898	Standard Oil Co.
Southery	Southery	Apr 18, 1898	Edward Luckenbach.
Venezuela	Panther	Apr 19, 1898	Red D Line S. S. Co.
Yumuri	Badger	do	Ward Line S. S. Co.
Yorktown	Rowdute	Apr 21, 1898	Old Dominion S. S. Co.
T P Fowler	Mohawk	Apr. 22, 1898	Cornell Steamboat Co.
Theopis	Hiat	Apr 22, 1898	David Dows Jr
Restless	Restless	do	Hiram W. Ridley.
Illawara	Onida	May 21, 1898	Eugene Tompkins.
Viking	Viking	Apr 22, 1898	Horace A. Hutchins.
Chatham	Vulcan	May 2, 1898	Merchants and Miners' Line.
Penelope	Yankton	May 20, 1898	H. E. Converse.
Right Arm	Pontiac	Apr 23, 1898	Merritt & Chapman.
Philadelphia	Peoria	May 23, 1898	Philadelphia Pilot Association.
Cornair	Gloucester	Apr. 23, 1898	Pierpont Morgan.
Mememsha	Iris	May 25, 1898	Miami Steamship Co.
Free Lance	Free Lance	do	F Augustus Schermerhorn.
John Dwight	Pawnee	May 6, 1898	Geo. T. Moon
Justin	Justin	Apr 22, 1898	Bowring & Archibald.
Hortense	Takoma	Apr 30, 1898	O'Connor & Smoot.
Aileen	Aileen	May 2, 1898	Richard Stevens.
Scindia	Scindia	May 12, 1898	Henderson Bros.
Comanche	Frolic	May 28, 1898	H M Hanna.
Illinois	Supply	Apr 30, 1898	International Navigation Co.
Kingston	Cesar	Apr 21, 1898	John Holman & Sons.
Dorothea	Dorothea	May 21, 1898	Thos McKean Estate.
Gov. Russell	Gov Russell	May 11, 1898	City of Boston.
East Boston	East Boston	June 2, 1898	Do.
W H Brown	Piscataqua	May 11, 1898	W H Brown
J. D Jones	Apache	May 24, 1898	Merritt & Chapman Wrecking Co.
Celtic King	Celtic	May 14, 1898	Federal Line (London).
Rhetia	Cassius	May 24, 1898	William Lamb
A. W. Booth	Massasoit	Apr 25, 1898	Moran Towing Co.
Joseph Holland	Hannibal	Apr 16, 1898	Francis Stanley Holland (London).
No. 3 (ice boat)	Arctic	May 21, 1898	City of Philadelphia (leased)
Atala	Alexander	Apr 25, 1898	New Star Blue Line Steamers (London).
Ellis Holland	Leonidas	Apr. 16, 1898	Francis Stanley Holland (London).
Harlech	Pompey	Apr 19, 1898	Jas. & Chas. Harrison (London).
Abarenda	Abarenda	May 5, 1898	J. Graham.
(Not known)	Scipio	do	Geo. P. Walford.
Peter Jebeon	Britus	June 3, 1898	L. F. Chapman & Co.
No 55	Water Barge, No. 1	May 25, 1898	Standard Oil Co.
Whitgift	Nero	June 30, 1898	McCondray & Co.
Norse King	Rainbow	June 29, 1898	Thomas Ronaldson.
Enquirer	Enquirer	do	W. J. Connors.
Ina	Luca	June 12, 1898	Frank B. McQuesten.
Huntress	Huntress	June 7, 1898	F C Fowler
Stranger	Stranger	June 9, 1898	Mrs. Mary Lewis.
Kate Jones	Seminole	June 6, 1898	Boston Towboat Co.

VESSELS PURCHASED—Continued.

Name before purchase.	Renamed.	Date of purchase.	Previous owners.
Bristol	Cheyenne	July 8, 1898	J. J. Cummings.
Engenia	Siren	June 9, 1898	J. G. Cassatt.
Elfrida	Elfrida	June 15, 1898	Dr. Seward Webb.
No. 285	Sylph	June —, 1898	John Roach & Co.
Shearwater	Shearwater	May 9, 1898	Henry R. Wolcott.
Sylvia	Sylvia	June 13, 1898	Edward M. Brown.
Hercules	Chickasaw	June 25, 1898	M. Revel.
Confidence	Waban .....	.....do	M. Revel.
Kanawha	Kanawha	June 7, 1898	John P. Duncan.
Pedro	Hector	June —, 1898	(Prize.)
Port Chalmers	Glacier	July —, 1898	Federal Line (London).
Titania	Marcellus	June 13, 1898	William Lamb.
Calgon	(Not on file)	June 4, 1898	G. F. Walford (chartered only).
Lucibone	Arethusa	Aug. 12, 1898	Thos. S. Hopkins.

VESSELS COMPLETED.

During the last fiscal year the following vessels were finally accepted by the Government:

Name of vessel.	Where and by whom built.	Date of acceptance.
Iowa	William Cramp & Sons, Philadelphia, Pa	Dec. 1, 1897
Helena	Newport News Shipbuilding and Dry Dock Co., Newport News, Va.	Oct. 8, 1897
Nashville	do	Nov. 19, 1897
Wilmington	do	Sept. 25, 1897
Annapolis	Lewis Nixon, Elizabethport, N. J	Sept. 21, 1897
Marietta	Union Iron Works, San Francisco, Cal	Dec. 10, 1897
Newport	Bath Iron Works, Bath, Me	Nov. 19, 1897
Vicksburg	do	Dec. 2, 1897
Foster	Columbian Iron Works, Baltimore, Md	Dec. 1, 1897
Wheeling	Union Iron Works, San Francisco, Cal	Dec. 16, 1897

The following vessels have been tried during the past fiscal year, preliminarily, and accepted on the dates given, subject to the usual final test after a certain time in service. Pending final acceptance the Government retains a small balance on their account.

Name of vessel.	Type.	Date of trial.	Speed required by contract.	Speed obtained on trial.	Date of preliminary acceptance.	By whom built.
Princeton	Composite gun-boat.	May 11, 1898	<i>Knots.</i> 12	<i>Knots.</i> a 10.6375	July 25, 1898	Dialogue & Sons.
Rodgers	Torpedo boat....	Sept. 11, 1897	24.5	24.6	Apr. 19, 1898	Columbian Iron Works.
Winlow	do	Dec. 1, 1897	24.5	24.82	Dec. 30, 1897	Do.
Dupont	do	Aug 11, 1897	27.5	28.51	Sept. 17, 1897	Herreshoff Manufacturing Co.
Morris	do	Apr. 18, 1898	22.5	24.05	May 12, 1898	Do.
Palmet	do	Mar. 3, 1898	20	21.15	Mar. 26, 1898	Do.
Gwin	do	Mar. 3, 1898	20	20.88	.....do	Do.
McKee	do	May 2, 1898	20	19.8	May 24, 1898	Columbian Iron Works.

a Speed trials waived.

In connection with the composite gunboats, all six of which have now been completed and accepted, the Bureau invites attention to the very small cost on account of changes in these vessels. The facts regarding each, in this connection, are tabulated below, showing the contract price

and the actual and proportional cost of changes. Attention was invited in the Bureau's report of last year to the remarkably low first cost of this group of vessels and to the advantages of their design as regards the cost of maintenance and repairs, which are believed to have been realized under service conditions:

Name.	Contract price.	Net increase in cost on account of changes.	Percentage of increase in contract on account of changes.
Annapolis.....	\$227, 700	\$6, 476. 09	2. 844
Vicksburg	229, 400	3, 010. 93	1. 312
Newport	229, 400	1, 585. 93	. 691
Wheeling	219, 000	2, 693. 00	1. 229
Marietta	223, 000	2, 824. 02	1. 266
Princeton	230, 000	8, 442. 60	3. 670

VESSELS SURVEYED.

The vessels given in the table below have been surveyed and repairs authorized during the past fiscal year:

Name of vessel.	Where surveyed.	Date of survey.	Estimated cost of repairs.
Massachusetts	New York	Nov. 16, 1897	\$3, 656. 00
Fern .....	.....do	Nov. 4, 1897	200. 00
Yorktown.....	Mare Island	Dec. 8-20, 1897.....	7, 770. 00
Maine.....	Norfolk.....	Dec. 6, 1897.....	4, 957. 00
Machias.....	Boston.....	Mar. 18, 19, 1898	2, 397. 00
Dolphin.....	New York.....	Nov. 8, 1897	44, 604. 50
Lancaster	Boston.....	Nov. 22 to Dec. 6, 1897 .	26, 775. 00
Marion a	Mare Island	Sept. 26 to Oct. 8, 1897 .	78, 815. 00
Cincinnati.....	New York	July 29, 1897	4, 167. 00
Brooklyn.....	.....do	Nov. 16, 1897	9, 360. 00
Terror.....	Norfolk.....	Jan. 24, 1898.....	3, 168. 00
Nashville .....	.....do	Nov. 28 to Dec. 4, 1897 .	4, 667. 00
Philadelphia	Mare Island	Jan. 10 to Feb. 5, 1898..	153, 010. 00
Essex	Portsmouth N. H.....	Mar. 17-24, 1898	4, 296. 00
Alliance.....	.....do	Jan. 10-15, 1898.....	2, 063. 00
Minneapolis.....	League Island	Feb. 28, 1898.....	4, 152. 00

a Not repaired. Loaned to naval militia of California.

VESSELS UNDER CONSTRUCTION.

The progress made during the past year in vessels under construction for the Department has been, on the whole, very satisfactory. The work upon the battle ships *Alabama*, *Illinois*, and *Wisconsin* has been held back to an appreciable degree by the impossibility of procuring armor at the time when the work had progressed to such an extent as to make it desirable to have the armor in place. The progress made in some of the torpedo vessels under construction has not fully met the requirements of the contracts; but in very many cases this work is of a character entirely new to the contractors, and the delays which have resulted are undoubtedly due to the caution naturally displayed by inexperienced builders in advancing the work. In the case of most of the vessels the delay in receiving material was presented as the reason for failure to progress properly in the work. The responsibility for such delays rests entirely with the contractors, however.

The Bureau has to suggest that past experience with builders of torpedo boats would seem to indicate that it would be a wise policy,

in awarding contracts, to limit builders who are entirely unfamiliar with torpedo-boat or other naval work to a single vessel, in order that they may not, on an apparent saving of a few thousand dollars, obtain their experience at an actual expense to the Government in cost of superintendence, etc., and at great annoyance and serious inconvenience to it in point of time.

The tabular statement below gives the condition of all vessels under construction July 1, 1898:

Name of vessel.	Where and by whom building.	Estimates of superintending constructors.	
		Percent- age of completion July 1	Probable date of completion.
Kearvarge	Newport News Shipbuilding and Dry Dock Co., Newport News, Va.	61.42	August, 1899.
Kentucky	do.	61.12	Do.
Illinois ^a	do.	48.74	April 1, 1900.
Alabama ^a	Wm. Cramp & Sons, Philadelphia, Pa.	60.00	September 24, 1899.
Wisconsin ^a	Union Iron Works, San Francisco, Cal.	40.00	September 1, 1899.
Albany	Sir Wm. G. Armstrong, Mitchell & Co., Newcastle-on-Tyne, England.		
Chesapeake	Bath Iron Works, Bath, Me.	3.00	June 16, 1899.
Rowan	Moran Bros. Co., Seattle, Wash.	99.00	Completed except of- ficial trial.
Dahlgren	Bath Iron Works, Bath, Me.	80.00	February 1, 1898.
T. A. M. Craven	do.	60.00	March 1, 1898.
Farragut ^b	Union Iron Works, San Francisco, Cal.	88.00	August 6, 1898.
Davis	Wolf & Zwicker Iron Works, Portland, Oreg.	94.00	November 1, 1898.
Fox	do.	88.00	December 1, 1898.
Mackenzie	The Chas. Hillman Ship and Engine Build- ing Co., Philadelphia, Pa.	99.00	Completed except of- ficial trial.
Stringham	Harlan & Hollingsworth Co., Wilmington, Del.	35.00	January 29, 1899.
Goldborough	Wolf & Zwicker Iron Works, Portland, Oreg.	15.00	In doubt.
Bailey	Gas Engine and Power Co., Morris Heights, N. Y.	12.00	February 1, 1899.
Plunger	Columbian Iron Works, Baltimore, Md.	73.00	In doubt.
Pennacook	United States Navy-Yard, New York	20.00	December 1, 1898.
Pawtucket	United States Navy-Yard, Mare Island, Cal.	18.00	Do.

^a The probable date of final completion of the *Illinois*, *Alabama*, and *Wisconsin* is based on the supposition that all armor will be delivered without undue delay.

^b Delayed by accident on trial.

VESSELS APPROPRIATED FOR.

Under the provisions of the last Congress for "Increase of the Navy," designs were prepared for the construction of 3 seagoing coast-line battle ships, 4 monitors, 16 torpedo-boat destroyers, and 12 torpedo boats, and bids for their construction invited by the Department. Preliminary work upon the design of the gunboat for which appropriation was made to take the place of the U. S. S. *Michigan* has commenced. General information pertaining to the designs in question will be found in the "Table of vessels."

CONTRACTS AWARDED.

Contracts have been awarded for the construction of battle ships, monitors, torpedo boats, and destroyers in accordance with the table given below.

Name.	Contractor.	Contract price.	Remarks.
<i>Battle ships.</i>			
No. 10, Maine	Cramp & Sons.....	\$2, 885, 000	Contractor's plans.
No. 11, Missouri.....	Newport News Shipbuilding Co.....	2, 885, 000	Do.
No. 12, Ohio.....	Union Iron Works	2, 890, 000	Do.
<i>Monitors.</i>			
No. 7, Arkansas.....	Newport News Shipbuilding Co.....	860, 000	Government plans.
No. 8, Connecticut	Bath Iron Works	862, 000	Do.
No. 9, Florida	Lewis Nixon	825, 000	Do.
No. 10, Wyoming	Union Iron Works	875, 000	Do.
<i>Torpedo-boat destroyers.</i>			
No. 1, Bainbridge	Neafie & Levy.....	283, 000	Government plans.
No. 2, Barry	do	288, 000	Do.
No. 3, Chauncey.....	do	283, 000	Do.
No. 4, Dale	William R. Trigg Co	260, 000	Do.
No. 5, Decatur	do	260, 000	Do.
No. 6, Hopkins.....	Harlan & Hollingsworth Co.....	291, 000	Contractor's plans.
No. 7, Hull	do	291, 000	Do.
No. 8, Lawrence.....	Fore River Engine Co.....	281, 000	Do.
No. 9, Macdonough.....	do	281, 000	Do.
No. 10, Paul Jones.....	Union Iron Works	285, 000	Government plans, slightly modified.
No. 11, Perry.....	do	285, 000	Do.
No. 12, Preble.....	do	285, 000	Do.
No. 13, Stewart	Gas Engine and Power Co	282, 000	Government plans.
No. 14, Truxtun.....	Maryland Steel Co	286, 000	Contractor's plans.
No. 15, Whipple.....	do	286, 000	Do.
No. 16, Worden	do	286, 000	Do.
<i>Torpedo boats.</i>			
No. 24, Bagley	Bath Iron Works	161, 000	Contractor's plans.
No. 25, Barney	do	161, 000	Do.
No. 26, Biddle	do	161, 000	Do.
No. 27, Blakely.....	Lawley & Son	159, 400	Government plans.
No. 28, De Long.....	do	159, 400	Do.
No. 29, Nicholson	Lewis Nixon	165, 000	Do.
No. 30, O'Brien.....	do	165, 000	Do.
No. 31, Shubrick	William R. Trigg Co	129, 750	Do.
No. 32, Stockton.....	do	129, 750	Do.
No. 33, Thornton	do	129, 750	Do.
No. 34, Tingey	Columbia Iron Works.....	168, 000	Do.
No. 35, Wilkes	Gas Engine and Power Co.....	146, 000	Do.

WORK OF THE BUREAU IN PREPARATION FOR WAR.

The table given below, showing the number of vessels and their class which have been fitted out and converted for purposes of war, indicates, to a certain extent, the work of this nature performed under the Bureau. The repairs to these vessels, their conversion to the needs of the naval service, the installation of batteries assigned them by the Bureau of Ordnance, docking and painting them, supplying them with proper equipage, etc., in addition to the maintenance and repair of the regular naval vessels, made necessary an increase in the workmen employed under the Bureau at the five principal yards—Boston, New York, League Island, Norfolk, and Mare Island—from 2,200 in January last to a maximum of over 6,000.

In addition to repairs and conversion at navy-yards, the private

shipyards have been utilized extensively for similar work under the Bureau, and have rendered material assistance in expediting the preparation and maintenance of vessels for war purposes. This work has been carefully supervised by constructors in the vicinity, in addition to their regular duties.

The Bureau recognizes that for the successful execution of this work it is greatly indebted to the hearty cooperation of the commandants of the several navy-yards and stations, as well as to that of the heads of other working departments in the yards. Without this cooperation and support the results accomplished would have been impossible of achievement.

Class of vessels fitted out.	Number of each.	Class of vessels fitted out.	Number of each.
Protected cruiser	1	Supply ships.....	3
Gunboat	1	Transports	2
Cruisers	11	Ferryboats	2
Torpedo boat	1	Ambulance ship	1
Yachts	28	Repair ship.....	1
Tugs	27	Distilling ships.....	3
Colliers	20	Pilot boat.....	1
Ice boat	1	Refrigerator ship.....	1
Tank steamer	1	Special class.....	1
Revenue cutters.....	15	Water barges.....	2
Light-house tenders	4		
United States Fish Commission.....	2	Total	129

As an illustration of the extent of the work accomplished in converting auxiliary vessels, there is given below a tabulated statement of the amounts expended, under cognizance of this Bureau, on several of the special class of vessels, together with the time required to make the necessary alterations approximately:

Name.	Service.	Cost of alterations in construction and repair.	Time required.
Selace	Hospital ship	\$51, 000	3 weeks.
Vulcan	Repair ship	26, 000	6 weeks.
Iris.....	Distilling ship	80, 000	10 weeks.

COMBUSTIBLE MATERIAL ON BOARD SHIP.

The naval engagements of the past few months have demonstrated so completely the necessity of avoiding the use of combustible material in the construction of vessels of war that the Bureau feels that the course advocated by it to do away entirely with woodwork wherever possible and to make such woodwork as might be absolutely necessary non-inflammable has been justified by events. Some dissatisfaction has at times been manifested on account of the discomfort necessitated in the living quarters by reducing woodwork to a minimum, and the objection to the use of treated wood has been frequently strong, and at times almost unreasonable. The Bureau believes, however, that events have demonstrated that the advantages gained more than compensate for the cost in money and the inconveniences resulting from the use of fireproofed wood. There is submitted below a

tabular statement of the vessels which have now woodwork wholly or in part treated to be non-inflammable.

Name of vessel.	Extent of fireproofing.	Name of vessel.	Extent of fireproofing.
Iowa	All joiner work above protective deck.	Marietta.....	Decks and joiner work.
Brooklyn	About half of joiner work above protective deck.	Newport.....	Do.
Alabama	All joiner work.	Princeton	Do.
Illinois	Do.	Vicksburg.....	Do.
Kearsarge	Do.	Wheeling.....	Do.
Kentucky	Do.	Rowan	Joiner work.
Wisconsin.....	Do.	Winslow	Do.
Miantonomoh	Decks and joiner work.	Rodgers	Do.
Chicago.....	Do.	Foote	Do.
Wilmington	Do.	Morris.....	Do.
Helena	Do.	Talbot.....	Do.
Nashville.....	Do.	Gwin	Do.
Annapolis	Do.	Mackenzie.....	Do.
		McKee	Do.

DRY DOCKS.

Serious inconveniences have been experienced during the past year on account of lack of facilities for docking the battle ships, and it has been necessary to resort to cleaning the bottoms of these vessels by divers—a practice very properly prohibited by the regulations except in cases of urgent military necessity, on account of the danger to which the ships so cleaned are exposed through corrosion of the under-water hull. The facilities for docking ships of smaller sizes have at times during the past year been taxed to their utmost and the need for additional facilities strongly felt. At Mare Island, the *Philadelphia*, upon which extensive repair work had to be done, was twice undocked before the completion of this work in order to make way for the *Monterey* and *Monadnock*, then being prepared for service at Manila.

The naval constructor at Norfolk reports that the timber dock at that place has been in actual use 1,064 days, or an average of 236 days per year since January 1, 1894, and the stone dock 669 days, or an average of 145 days per year. At the time his report was made these docks were occupied by the *Iris* and *Dolphin*, respectively, while the *Katahdin* and *Rainbow* were underorders to dock. The *Sterling*, which had requested to be docked, had to be sent to sea without docking. The *Justin*, in urgent need of docking, was sent to Newport News, and the torpedo boat *McKee* to a private dock in the vicinity.

The necessity for hastening the construction of docks appropriated for during the last session of Congress is therefore strongly evident.

EXPERIMENTAL TANK.

The experimental tank and building have been completed since the Bureau's last annual report. Unforeseen difficulties encountered during the excavation made the work difficult and expensive to the contractors, who performed their contract, however, in a satisfactory manner, aside from a delay of some months in completion.

Contractors for the electrical and towing equipment, for all of which orders have been placed for a considerable time, are also behind in their contracts, due largely, no doubt, to pressure of other Government work, and in some part to the intricacies of design involved. Deliveries are now being made, however, the electric generators having already been placed, and the tank is expected to be in operation before the end of the year.

NAVY-YARD APPRENTICES.

The number of apprentices at the several navy-yards is very small and has been decreasing. The special character of the work at these yards makes it particularly desirable that there shall be in the force at each as many men as possible of every trade who, from their training and long service, are thoroughly familiar with this class of work. This need is more strongly felt at isolated stations and on the west coast, where the number of mechanics in the vicinity of each that are skilled in naval work is small. During the emergency work recently carried on at Mare Island Navy-Yard it was impossible to obtain as many competent mechanics as might have been utilized to advantage. Experience shows that men who have served their apprenticeships in the large shipyards or in navy-yards during recent years make the most valuable navy-yard workmen, as they are familiar with all classes of ship work under their respective trades, and their output is considerably greater than that of other mechanics who have not had the benefit of such experience.

In former times many, if not all, of the most competent and efficient master workmen were men who had served their time as apprentices. The practice is being much neglected, both in the navy-yards and in the private shipbuilding establishments, and its revival and enlargement is therefore strongly urged. By carefully selecting boys for apprenticeship, subjecting them to physical examination upon entry, and carrying out rigidly the period of apprenticeship from entry to seniority, there could be educated at our navy-yards workmen who, from their familiarity with all branches of their trade, would make most valuable mechanics, from whom in time the foremen, quartermen, and leading men would be largely drawn.

EFFICIENCY OF VESSELS.

The behavior of all classes of our naval vessels throughout the various conditions of war under which they served during the past months is a source of gratification to the Bureau, in which the designs of the greater part of them have been developed. The many complicated and interdependent considerations involved in the several classes, together with the large amount of petty detail, could not but afford opportunity for criticism from various standpoints, as well as for actual errors of judgment in applying too little or too great weight to any of the many considerations referred to.

Moreover, the lack of reliable data regarding the behavior of the modern ship of war in action lent a very considerable amount of uncertainty to the expectations regarding the conduct of our own vessels in an engagement with the enemy. Although the results of the encounters in which our fleets have engaged demonstrated their superiority so overwhelmingly as to throw doubt upon the value of any deductions which might be made therefrom, the behavior of all classes of vessels, both in action and in general service on the blockade, appears to have been such as to thoroughly demonstrate their integrity and their suitability for the service for which they were designed, and is therefore a matter for congratulation to all concerned.

The rectification of such minor faults as may have developed, and their elimination from future designs, will be the Bureau's chief aim.

CORPS OF NAVAL CONSTRUCTORS.

The Bureau ventures to point out the fact that the immense amount of work carried out under its cognizance during the past six or eight months has been accomplished without any increase in the personnel of the construction corps beyond the placing on active duty of three retired officers.

As much of the work was carried on continuously, day and night, with careful supervision at all times, it must be apparent that such results could be obtained only by the most faithful and unremitting attention to duty on the part of the naval constructors. This work at navy-yards must continue for many months to come, since the vessels now returning from active operations require careful attention to make good the wear and tear they have undergone. Moreover, the contracts for new work now being placed, in addition to that already on hand, add greatly to the demands upon the Bureau and upon the officers serving under it.

In the opinion of the Bureau, the increase in the personnel of the construction corps has hardly been as rapid as the demands upon its services. Believing, therefore, that the Department recognizes the desirability of placing and maintaining the corps in a position that will enable the Bureau to continue to meet efficiently the increased requirements of the Service, it has earnestly to appeal for a continuance, in proportion to its needs, of the liberal policy recently followed in assigning officers to the corps. The existing conditions as to rank in the construction corps, relatively to that of other corps, has already been laid before the Department and the committees of Congress, and will doubtless be recognized in the event of any legislation affecting the personnel of the Navy.

TONNAGE OF VESSELS OF THE NAVY.

In the table of vessels of the Navy, which follows, are given the gross tonnage and net tonnage of vessels built and building for the Navy, as well as for vessels purchased for it during the existing war. For the merchant vessels and yachts among the latter, the tonnages given are from the measurements required by law for merchant vessels. In the case of the vessels of the regular Navy, the tonnages given have been calculated with deductions in the case of net tonnage for the machinery space only. The laws regarding tonnage can not, as they stand, be readily applied to vessels of war, except for machinery-space deductions. In view of the possible importance of this matter in the case of vessels using canals, or becoming in any manner liable to dues based upon tonnage, it is recommended that an interpretation of the tonnage laws as applied to vessels of war be requested, and that after such an interpretation is made each of the vessels of the regular Navy be measured for tonnage; and that vessels building be measured officially by the proper authorities while in frame.

Table of vessels of the
ARMORED STEEL VESSELS—

Name.	Type.	Rig.	By whom and where built or building.	Condition or service.
Alabama.....	Seagoing coast-line battle ship. Two 13" barbette turrets.	Two military masts.	Wm. Cramp & Sons, Philadelphia, Pa.	Building.....
Illinois	Seagoing coast-line battle ship. Two 13" barbette turrets.	Two military masts.	Newport News S. B. & D. D. Co., Newport News, Va.	Building.....
Indiana.....	Seagoing coast-line battle ship. 2 13" barbette turrets. 4 8" barbette turrets.	One military mast.	Wm. Cramp & Sons, Philadelphia, Pa.	North Atlantic Fleet.
Iowa.....	Seagoing coast-line battle ship. 2 12" barbette turrets. 4 8" barbette turrets.	One military mast.	Wm. Cramp & Sons, Philadelphia, Pa.	North Atlantic Fleet.
Kearsarge	Seagoing coast-line battle ship. 2 13" barbette turrets. 2 8" turrets superposed.	Two military masts.	Newport News S. B. & D. D. Co., Newport News, Va.	Building.....
Kentucky	Seagoing coast-line battle ship. 2 13" barbette turrets. 2 8" turrets superposed.	Two military masts.	Newport News S. B. & D. D. Co., Newport News, Va.	Building.....
Maine	Seagoing coast-line battle ship. 2 12" barbette turrets.	Two military masts.	Wm. Cramp & Sons, Philadelphia, Pa.	Building.....
Massachusetts..	Seagoing coast-line battle ship. 2 13" barbette turrets. 4 8" barbette turrets.	One military mast.	Wm. Cramp & Sons, Philadelphia, Pa.	Eastern Squadron.
Missouri.....	Seagoing coast-line battle ship. 2 12" barbette turrets.	Two military masts.	Newport News S. B. & D. D. Co., Newport News, Va.	Building.....
Ohio	Seagoing coast-line battle ship. 2 12" barbette turrets.	Two military masts.	Union Iron Works, San Francisco, Cal.	Building.....
Oregon	Seagoing coast-line battle ship. 2 13" barbette turrets. 4 8" barbette turrets.	One military mast.	Union Iron Works, San Francisco, Cal.	Eastern Squadron.
Wisconsin.....	Seagoing coast-line battle ship. 2 13" barbette turrets.	Two military masts.	Union Iron Works, San Francisco, Cal.	Building.....

SECOND CLASS

Texas	Armored battle ship. 2 12" turrets.	Two military masts.	U. S. navy-yard, Norfolk, Va.	North Atlantic Fleet.
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* With two-thirds of ammunition and two-thirds of stores.

† Estimated.

United States Navy.

FIRST-CLASS BATTLE SHIPS.

Ship fully equipped ready for sea, all stores on board. Normal coal supply.				Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots per hour.	Maximum indicated horse power.	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.	Maximum draft aft at lowest point of keel. Ship ready for sea, bunkers full.
Length on load water line.	Extreme breadth.	Mean draft.	Displacement.									
Ft. In.	Ft. In.	Ft. In.	Tons.	Tons.	Tons.				Tons.	Tons.	Tons.	Ft. In.
308 0	72 2½	23 6	*11,525	6,802.12	5,144.64	Twin screw vertical triple expansion.	116	110,000	47.25	800	1,200	.....
308 0	72 2½	23 6	*11,525	6,802.12	5,144.64	Twin screw vertical triple expansion.	116	110,000	47.25	800	1,200	.....
348 0	69 3	24 0	10,288	5,289.64	4,020.74	Twin screw vertical triple expansion.	15.547	9,739	43	400	1,597	27 1½
360 0	72 2½	24 0	11,340	6,294.76	5,159.00	Twin screw vertical triple expansion.	17.067	12,105	45.95	825	1,795	28 9¼
368 0	72 2½	23 6	11,525	6,831.81	5,164.05	Twin screw vertical triple expansion.	116	110,000	47.25	410	1,310	.....
											1,045	.....
	72 2½	23 6	11,525	6,831.81	5,164.05	Twin screw vertical triple expansion.	116	110,000	47.25	410	1,310	.....
											1,045	.....
388 0	72 2½	23 10½	12,500	.....	.....	Twin screw vertical inverted triple expansion.	118	116,000	52	1,000	2,000	.....
348 0	69 3	24 0	10,288	5,289.64	4,020.74	Twin screw vertical triple expansion.	16.21	10,403	43	400	1,597	27 1½
388 0	72 2½	23 10½	12,500	.....	.....	Twin screw vertical inverted triple expansion.	118	116,000	52	1,000	2,000	.....
388 0	72 2½	23 10½	12,500	.....	.....	Twin screw vertical inverted triple expansion.	118	116,000	52	1,000	2,000	.....
348 0	69 3	24 0	10,288	5,289.64	4,174.48	Twin screw vertical triple expansion.	16.79	11,111	43	400	1,594	27 1½
368 0	72 2½	23 6	*11,525	6,802.12	5,144.64	Twin screw vertical triple expansion.	116	110,000	47.25	800	1,200	.....

BATTLE SHIP.

301 4	64 1	23 6	6,315	4,060.31	2,529.08	Twin screw vertical triple expansion.	17.8	6,410	80.22	600	650	24 6
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; Nominal loose stowage.

§ Maximum.

Table of vessels of the United

ARMORED STEEL VESSELS—

Name.	Batteries.			Armor.			Protective deck.		Water-line protection, obturating material.	
	Main.	Secondary.	Torpedo tubes.	Sides.	Turrets.	Barbettes.	Slopes.	Flat.	Cocoa, capacity in cubic feet.	Corn pith capacity in cubic feet.
				Inches.	In.	In.	Inches.	In.		
Alabama	4 12" B. L. R. 14 6" R. F. guns.	166-pdr. R. F. 61-pdr. R. F. 4 Colts. 23" R. F. field	4 Long White-head.	Top 16½ Bottom 9½ Water-line 13½	14	15 10	For'd 3 Aft 4	2½		*12,464
Illinois	4 12" B. L. R. 14 6" R. F. guns.	166-pdr. R. F. 61-pdr. R. F. 4 Colts. 23" R. F. field	4 Long White-head.	Top 16½ Bottom 9½ Water-line 13½	14	15 10	For'd 3 Aft 4	2½		*12,464
Indiana	4 12" B. L. R. 8 8" B. L. R. 4 6" B. L. R.	206-pdr. R. F. 71-pdr. R. F. 23" R. F. field	3 White-head.	16	15 6	17 8		2½	15,814.40	
Iowa	4 12" B. L. R. 8 8" B. L. R. 0 4" R. F. guns.	206-pdr. R. F. 41-pdr. R. F. 4 Colts. 23" R. F. field	4 Howell	14	15 8 7	15 8 & 6		2½	*19,395.41	
Kearsarge	4 12" B. L. R. 4 8" B. L. R. 14 5" R. F. guns.	206-pdr. R. F. 61-pdr. R. F. 4 Colts. 23" R. F. field	4 Long White-head.	Top 16½ Bottom 9½ Water-line 13½	17 15 11	16 12	For'd 3 Aft 6	2½		*10,604.76
Kentucky	4 12" B. L. R. 4 8" B. L. R. 14 5" R. F. guns.	206-pdr. R. F. 61-pdr. R. F. 4 Colts. 23" R. F. field	4 Long White-head.	Top 16½ Bottom 9½ Water-line 13½	17 15 11	16 12	For'd 3 Aft 5	2½		*10,604.76
Maine	4 12" B. L. R. 16 6" R. F. G.	206-pdr. R. F. 61-pdr. R. F. 4 Gatlings 13" R. F. field	2 submerged.	Top 12 Bottom 18½	17 15	16 10	For'd 3 Aft 4	2½		
Massachusetts	4 12" B. L. R. 8 8" B. L. R. 4 6" B. L. R.	206-pdr. R. F. 61-pdr. R. F. 2 Colts. 23" R. F. field	3 White-head.	18	15 6	17 8 8		2½	15,814.40	
Missouri	4 12" B. L. R. 16 6" R. F. G.	206-pdr. R. F. 61-pdr. R. F. 4 Gatlings 13" R. F. field	2 submerged.	Top 12 Bottom 18½	17 15	16 10	For'd 3 Aft 4	2½		
Ohio	4 12" B. L. R. 16 6" R. F. G.	206-pdr. R. F. 61-pdr. R. F. 4 Gatlings 13" R. F. field	2 submerged.	Top 12 Bottom 18½	17 15	16 10	For'd 3 Aft 4	2½		
Oregon	4 12" B. L. R. 8 8" B. L. R. 4 6" B. L. R.	206-pdr. R. F. 61-pdr. R. F. 2 Colts. 13" R. F. field	3 White-head.	18	15 6	17 8 8		2½	15,814.40	
Wisconsin	4 12" B. L. R. 14 6" R. F. guns.	166-pdr. R. F. 41-pdr. R. F. 4 Colts. 23" R. F. field	4 Long White-head.	Top 16½ Bottom 9½ Water-line 13½	14	15 10	For'd 3 Aft 4	2½		*12,464
SECOND-CLASS										
Texas	3 12" B. L. R. 16 6" B. L. R.	126-pdr. R. F. 61-pdr. R. F. 4 87-mm H. R. C. 2 Colts. 1 field gun ...	2 White-head.	12	12			2		

* Estimated.

† Above main belt, 5½"; superstructure armor, 6".

Navy, 1896—Continued.

CLASS BATTLE SHIPS.

No.	Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
440	\$2,650,000	June 10, 1896	Sept. 24, 1896	Dec. 1, 1896	May 18, 1898	Sept. 24, 1899	
449	2,585,000	June 10, 1896	Sept. 26, 1896	Feb. 10, 1897	Oct. 4, 1898	Sept. 26, 1899	
441	3,020,000	June 30, 1890	Nov. 19, 1890	May 7, 1891	Feb. 28, 1893	Nov. 19, 1893	Nov. 20, 1895
469	3,010,000	July 19, 1892	Feb. 11, 1893	Aug. 5, 1893	Mar. 28, 1896	Feb. 11, 1896	June 16, 1897
471	2,250,000	Mar. 2, 1896	Jan. 2, 1896	June 30, 1896	Mar. 24, 1898	Jan. 2, 1899	
471	2,250,000	Mar. 2, 1896	Jan. 2, 1896	June 30, 1896	Mar. 24, 1898	Jan. 2, 1899	
....	2,885,000	May 4, 1898	Oct. 1, 1898			June 1, 1901	
441	3,020,000	June 30, 1890	Nov. 18, 1890	June 25, 1891	June 10, 1893	Nov. 18, 1893	June 10, 1896
....	2,885,000	May 4, 1898	Oct. 11, 1898			June 11, 1901	
....	2,890,000	May 4, 1898	Oct. 5, 1898			June 5, 1901	
441	3,180,000	June 30, 1890	Nov. 19, 1890	Nov. 19, 1891	Oct. 26, 1893	Nov. 19, 1893	July 15, 1896
449	2,674,950	June 10, 1896	Sept. 10, 1896	Feb. 9, 1897		Sept. 19, 1899	

ATTLE SHIP.

389	2,500,000	Aug. 3, 1896		June 1, 1899	June 28, 1892		Aug. 15, 1896
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; Limit of cost.

Table of vessels of the
ARMORED STEEL VES

Name.	Type.	Rig.	By whom and where built or building.	Condition or service.
Brooklyn.....	Armored cruiser Four 8" barbette turrets.	Two military masts.	Wm. Cramp & Sons, Philadelphia, Pa.	North Atlantic Fleet.
New York.....	Armored cruiser. Two 8" barbette turrets.	Two military masts.	Wm. Cramp & Sons, Philadelphia, Pa.	Flagship, North Atlantic Fleet.

ARMORED

Katahdin	Harbor-defense ram...	None	Bath Iron Works, Bath, Me.	North Atlantic Fleet.
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ARMORED

Name.	Batteries.			Armor.			Protective deck.		Water-line protection—obstaculating material.	
	Main.	Secondary.	Torpedo tubes.	Sides.	Turrets.	Barbettes.	Slopes.	Flat.	Cocoa, capacity in cubic feet.	Corn path, capacity in cubic feet.
Brooklyn.....	{ 8 8" B. L. R. ... 125" R. F. guns	{ 126-pdr. R. F. ... 4 1-pdr. R. F. ... 4 Colts. ... 2 3" R. F. field	{ 4 White-head	Inches.	In.	In.	In.	In.	34,700.23	
New York ...	{ 6 8" B. L. R. ... 124" R. F. guns	{ 2 1-pdr. R. F. ... 2 Colts. ... 2 3" R. F. field	{ 2 White-head.	4	5 1/2	10	6	2	25,382.05	

ARMORED

Katahdin	4 6-pdr. R. F. ...			{ 8 3 }			6	2		
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* Estimated.

United States Navy—Continued.

SELF-ARMORED CRUISERS.

Ship fully equipped ready for sea, all stores on board. Normal coal supply.													
Length on load water line.		Extreme breadth.		Mean draft.	Displacement.	Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots per hour.	Maximum indicated horse-power.	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.
Ft. In.	Ft. In.	Ft. In.	Ft. In.		Tons.	Tons.	Tons.				Tons.	Tons.	Tons. Ft. In.
300 6	64 6½	24 0			9,215	8,097.38	3,470.67	Twin-screw vertical triple expansion.	21.91	18,700	41.19	900	1,451 26 2
280 6½	64 10	23 ¾			8,300	8,001.42	3,091.08	Twin-screw vertical triple expansion.	21	17,401	38.50	750	1,200 26 8

RAM.

380 9	43 5	15 0			2,156	865.87	131.58	Twin-screw vertical triple expansion.	16.11	5,066	19.16	175	182.70 16 0
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CRUISERS.

Complement.		Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
Officers.	Men.							
66	470	\$2,900,000	July 19, 1892	Feb. 11, 1893	Aug. 2, 1893	Oct. 2, 1895	Feb. 11, 1896	Dec. 1, 1896
40	320	2,800,000	Sept. 7, 1892	Aug. 29, 1893	Sept. 30, 1893	Dec. 2, 1895	Jan. 1, 1896	Aug. 1, 1893

RAM.

7	90	900,000	Mar. 2, 1899	Jan. 20, 1901	July 1901	Feb. 4, 1902	July 28, 1902	Feb. 20, 1904
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Table of vessels of the United
ARMORED VESSELS—DOUBLE

Name.	Type.	Rig.	By whom and where built or building.	Condition of service.
Amphitrite.....	Iron low freeboard coast-defense monitor. Two steel barbettes turrets.	One military mast.	Harlan & Hollingsworth, Wilmington, Del.	North Atlantic Fleet.
Miantonomoh...	Iron low freeboard coast-defense monitor. Two compound armor turrets.	One military mast.	John Roach, Chester, Pa.	North Atlantic Fleet.
Monadnock.....	Iron low freeboard coast-defense monitor. Two steel barbettes turrets.	One military mast.	Continental Iron Works, Vallejo, Cal.	Asiatic Squadron.
Monterey.....	Steel low freeboard monitor. Two steel barbettes turrets.	One military mast.	Union Iron Works, San Francisco, Cal.	Asiatic Squadron.
Puritan.....	Iron low freeboard coast-defense monitor. Two steel barbettes turrets.	One military mast.	John Roach, Chester, Pa.	North Atlantic Fleet.
Terror.....	Iron low freeboard coast-defense monitor. Two steel turrets.	One military mast.	Wm. Cramp & Sons, Philadelphia, Pa.	North Atlantic Fleet.

Name.	Batteries.			Armor.			Protective deck.	
	Main.	Secondary.	Torpedo tubes.	Sides.	Turrets.	Barbettes.	Slopes.	Flat.
				<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Amphitrite...	4 10" B. L. R. 2 4" R. F. guns	2 6-pdr. R. F. 2 3-pdr. R. F. 2 87" H. R. C. 6 1-pdr. R. F. G. 1 3" R. F. Field. 1 Colt		{ 9 5 }	7 1/2	11 1/2		11
Miantonomoh..	4 10" B. L. R.	2 6-pdr. R. F. G. 2 3-pdr. R. F. G. 6 1-pdr. R. F. G. 2 Colt 1 field gun		7	11 1/2			11
Monadnock....	4 10" B. L. R. 2 4" R. F. guns	2 6-pdr. R. F. 2 3-pdr. R. F. 2 87" H. R. C. 2 1-pdr. R. F. G. 2 Colt 1 field gun		{ 9 5 }	7 1/2	11 1/2		11
Monterey...	2 12" B. L. R. 2 10" B. L. R.	6 6-pdr. R. F. 4 1-pdr. R. F. 2 Colt 1 field gun		{ 13 8 6 }	For'd 8" Aft 7 1/2"	For'd 13" Aft 11 1/2"		11
Puritan.....	4 12" B. L. R. 6 4" R. F. guns	6 6-pdr. R. F. 2 87" H. R. C. 2 1-pdr. R. F. 1 field gun		{ 14 10 6 }	8	14		11
Terror.....	4 10" B. L. R.	2 6-pdr. R. F. 2 3-pdr. R. F. 2 87" H. R. C. 2 1-pdr. R. F. 2 Colt 1 field gun		7	11 1/2			11

States Navy—Continued.

TURRETED MONITORS.

Ship fully equipped ready for sea, all stores on board. Normal coal supply.						Type of engine.	Speed in knots per hour.	Maximum indicated horse-power.	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.	Maximum draft aft at lowest point of keel. Ship ready for sea, bunkers full.
Length on load water line.	Extreme breadth.	Mean draft.	Displacement.	Gross tonnage.	Net tonnage.							
Ft. In.	Ft. In.	Ft. In.	Tons.	Tons.	Tons.				Tons.	Tons.	Tons.	Ft. In.
259 8	55 6	14 6	3,990	1,536.15	961.45	Twin screw inclined compound.	10.5	1,600	27.67	250	250	14 7½
259 8	55 6	14 6	3,990	1,330.65	701.35	Twin screw inclined compound.	10.5	1,426	27.67	250	200	15 0
259 8	55 6	14 6	3,990	1,536.15	961.45	Twin screw horizontal triple expansion.	12	3,000	27.67	250	250	14 7½
256 0	59 0	14 10	4,084	1,485.59	814.87	Twin screw vertical triple expansion.	13.6	5,244	26.74	200	236	15 4
289 6	60 1½	18 0	6,060	2,144.18	1,048.70	Twin screw horizontal compound.	12.4	3,700	33.64	307	314	18 6
259 8	55 6	14 6	3,990	1,515.65	636.60	Twin screw inclined compound.	10.5	1,600	27.67	250	250	15 4

Complement.		Contract price of hull and machinery	Date of act authorizing building or completion.	Contract signed.	Keel laid.	Launched.	Contract date of completion	Date of first commission.
Off. crew.	Men.							
26	156	(*)	{ Mar. 3, 1885 Aug. 3, 1886 Mar. 3, 1887 }	.....	1874	June 7, 1883	.....	Apr. 28, 1896
13	136	(*)	{ Mar. 3, 1885 Aug. 3, 1886 Mar. 3, 1887 }	.....	1874	Dec. 5, 1876	.....	Oct. 27, 1891
26	157	(*)	{ Mar. 3, 1885 Aug. 3, 1886 Mar. 3, 1887 }	.....	1875	Sept. 19, 1883	.....	Feb. 20, 1896
19	176	\$1,028,950	Mar. 3, 1887	June 14, 1889	July, 1889	Apr. 28, 1891	June 14, 1892	Feb. 13, 1893
22	208	(*)	{ Mar. 3, 1885 Aug. 3, 1886 Mar. 3, 1887 }	.....	1875	Dec. 6, 1882	.....	Dec. 10, 1896
26	151	(*)	{ Mar. 3, 1885 Aug. 3, 1886 Mar. 3, 1887 }	.....	1874	Mar. 24, 1883	.....	Apr. 15, 1896

* Appropriation to complete Amphitrite, Miantonomoh, Menadueck, Puritan, and Terror, \$2,175,000.

Table of vessels of the United
ARMORED STEEL VESSELS—SINGLE

Name.	By whom and where built or building.	Condition of service.	Ship fully equipped ready for sea, all stores on board. Normal coal supply.			
			Length on load water line.	Extreme breadth.	Mean draft.	Displacement.
Arkansas.....	Newport News S. B. & D. D. Co., Newport News, Va.	Building	Ft. In. 225 0	Ft. In. 50 0	Ft. In. 12 6	Tons. 2,735
Connecticut	Bath Iron Works, Bath, Me.	Building	225 0	50 0	12 6	2,735
Florida	Lewis Nixon, Elizabethport, N. J.	Building	225 0	50 0	12 6	2,735
Wyoming	Union Iron Works, San Francisco, Co.	Building	225 0	50 0	12 6	2,735

Name.	Batteries.			Armor.			Protective deck.		Water line protection—obtaining material.	
	Main.	Secondary.	Torpedo tubes.	Sides.	Turrets.	Barbettes.	Slopes.	Flat.	Cocoa, capacity in cubic feet.	Corn, capacity in cubic feet.
				Inches.	In.	In.	In.	In.		
Arkansas	2 12" B. L. R. 4 4" R. F. ...	3 6-pdr. R. F. 4 1-pdr. R. F. ...	None ...	11	10	11	....	1½	None ...	None ...
Connecticut..	2 12" B. L. R. 4 4" R. F. ...	3 6-pdr. R. F. 4 1-pdr. R. F. ...								
Florida	2 12" B. L. R. 4 4" R. F. ...	3 6-pdr. R. F. 4 1-pdr. R. F. ...	None ...	11	10	11	....	1½	None ...	None ...
Wyoming.....	2 12" B. L. R. 4 4" R. F. ...	3 6-pdr. R. F. 4 1-pdr. R. F. ...								

States Navy—Continued.

FURRET HARBOR DEFENSE MONITORS.

Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots per hour.	Maximum indicated horse-power.	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.	Maximum draft at low-eat point of keel. Ship ready for sea, bunkers full.
Tons.	Tons.		* 12	* 2,400	Tons. 22.16	Tons. 200	Tons. 200	Ft. In.
.....	* 13	* 2,400	22.16	200	200	.....
.....	* 12	* 2,400	22.16	200	200	.....
.....	* 13	* 2,400	22.16	200	200	.....

Complement.		Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
Officers.	Men.							
7	134	\$880,000	May 4, 1898	Oct. 11, 1898	.....	.....	Jan. 11, 1901	.....
7	134	882,000	May 4, 1898	Oct. 19, 1898	.....	.....	Jan. 19, 1901	.....
7	134	825,000	May 4, 1898	Oct. 11, 1898	.....	.....	Oct. 11, 1901	.....
7	134	873,000	May 4, 1898	Oct. 5, 1898	.....	.....	Jan. 5, 1901	.....

* Estimated.

Table of vessels of the United

ARMORED IRON VESSELS—LOW FREEBOARD

Name.	Keel laid.	By whom and where built.	Condition of service..	Dimensions.			Displacement.	Indicated horse-power.
				Length between perpendiculars.	Breadth.	Mean draft.		
Ajax	1862	Snowden & Mason, Pittsburg, Pa.	Auxiliary Naval Force.	225	43 8	13 6	2,100	340
Cabonicus	1862	Harrison Loring, Boston, Mass.	Auxiliary Naval Force.	225	43 8	13 6	2,100	340
Catakill	1862	John Ericsson, Brooklyn, N. Y.	Auxiliary Naval Force.	200	46 0	11 6	1,875	340
Comanche	1862	Donahue, Ryan & Secor, Jersey City, N. J.	Navy-Yard Mare Island, Cal.	200	46 0	11 6	1,875	340
Jason	1862	John Ericsson, Chester, Pa.	Auxiliary Naval Force.	200	46 0	11 6	1,875	340
Lehigh	1862	John Ericsson, Chester, Pa.	Auxiliary Naval Force.	200	46 0	11 6	1,875	340
Mahopac	1862	Z. & F. Secor, Jersey City, N. J.	Auxiliary Naval Force.	225	43 8	13 6	2,100	340
Manhattan	1862	Perine, Secor & Co., Jersey City, N. J.	Auxiliary Naval Force.	225	43 8	13 6	2,100	340
Montank	1862	John Ericsson, Brooklyn, N. Y.	Auxiliary Naval Force.	200	46 0	11 6	1,875	340
Nahant	1862	Harrison Loring, Boston, Mass.	Auxiliary Naval Force.	200	46 0	11 6	1,875	340
Nantucket	1862	Atlantic Works, Boston, Mass.	Auxiliary Naval Force.	200	46 0	11 6	1,875	340
Passaic	1862	John Ericsson, Brooklyn, N. Y.	Auxiliary Naval Force.	200	46 0	11 6	1,875	340
Wyandotte	1862	Miles Greenwood, Cincinnati, Ohio.	Auxiliary Naval Force.	225	43 8	13 6	2,100	340

Navy—Continued.

SINGLE-TURRET MONITORS.

Type of engine.	Speed in knots.	Batteries.		Armor.		Cost of hull and machinery.	Date of act authorising the building.
		Main.	Secondary.	Sides. In.	Turret. In.		
Single screw grasshop- per.	5 to 6	2 XV" S. B..	None	5	10	\$626,582.24	Apr. 17, 1862
Single screw grasshop- per.	6	2 XV" S. B..	2 12-pdr. H..	5	10	622,903.22	Apr. 17, 1862
Single screw grasshop- per.	6	2 XV" S. B..	None	5	11	427,766.78	Apr. 17, 1862
Single screw grasshop- per.	5 to 6	2 XV" S. B..	None	5	11	613,164.99	Apr. 17, 1862
Single screw grasshop- per.	5 to 6	2 XV" S. B..	2 12-pdr. H..	5	11	422,766.73	Apr. 17, 1862
Single screw grasshop- per.	6 to 6	2 XV" S. B..	2 12-pdr. H..	5	11	422,726.28	Apr. 17, 1862
Single screw grasshop- per.	6	2 XV" S. B..	2 12-pdr. H.	5	10	635,374.55	Apr. 17, 1862
Single screw grasshop- per.	6	2 XV" S. B..	2 12-pdr. H..	5	10	628,879.27	Apr. 17, 1862
Single screw grasshop- per.	5 to 6	2 XV" S. B..	2 12-pdr. H..	5	11	423,027.49	Apr. 17, 1862
Single screw grasshop- per.	5 to 6	2 XV" S. B..	2 12-pdr. H.	5	11	413,515.14	Apr. 17, 1862
Single screw grasshop- per.	5 to 6	2 XV" S. B..	2 12-pdr. H..	5	11	408,091.37	Apr. 17, 1862
Single screw grasshop- per.	5 to 6	2 XV" S. B.	2 12-pdr. H..	5	11	423,171.69	Apr. 17, 1862
Single screw grasshop- per.	6	2 XV" S. B..	2 12-pdr. H..	5	10	623,327.84	Apr. 17, 1862

Navy—Continued.

SELECTED CRUISERS.

Dis- t. [m.]	Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
150	\$617,000	Mar. 3, 1883	July 23, 1883	Nov. 8, 1883	Oct. 9, 1884	Jan. 23, 1885	July 19, 1886
150	1,325,000	Aug. 3, 1886	Dec. 17, 1886	May 5, 1887	Oct. 6, 1888	June 17, 1888	Jan. 7, 1890
250	619,000	Mar. 3, 1883	July 23, 1883	Nov. 15, 1883	Dec. 4, 1884	Jan. 23, 1885	May 2, 1887
286	1,017,500	Mar. 3, 1885	Dec. 28, 1886	Jan. 20, 1887	July 19, 1888	June 28, 1888	Dec. 26, 1889
376	880,000	Mar. 3, 1883	July 26, 1883	Dec. 29, 1883	Dec. 5, 1885	Jan. 26, 1886	Apr. 17, 1889
384	*1,100,000	Sept. 7, 1888	.....	Jan., 1890	Nov. 10, 1892	.....	June 16, 1894
447	2,725,000	June 30, 1890	Nov. 19, 1890	Dec. 30, 1890	July 26, 1892	May 19, 1893	Apr. 23, 1894
447	2,690,000	Mar. 2, 1891	Aug. 31, 1891	Dec. 16, 1891	Aug. 12, 1893	Aug. 31, 1893	Dec. 13, 1894
350	1,248,000	Mar. 3, 1885	Oct. 27, 1887	June 12, 1888	Mar. 19, 1890	Oct. 27, 1889	Feb. 2, 1891
416	1,796,000	Sept. 7, 1888	July 10, 1890	June, 1891	Nov. 5, 1892	Apr. 1, 1893	Feb. 5, 1895
350	1,350,000	Mar. 3, 1887	Oct. 27, 1887	Mar. 22, 1888	Sept. 7, 1889	Oct. 27, 1889	July 28, 1890
283	*1,100,000	Sept. 7, 1888	.....	Dec., 1889	Mar. 31, 1892	.....	Apr. 17, 1894
350	1,428,000	Mar. 3, 1887	Oct. 26, 1887	Aug., 1888	Oct. 26, 1889	Oct. 26, 1889	Nov. 15, 1890

* Limit of cost.

Table of vessels of the United
UNARMORED STEEL VESSELS—PROTECTED

Name.	Rig.	By whom and where built or building.	Condition or service.
Albany	Two military masts.	Sir W. G. Armstrong, Mitchell & Co., Elswick yard, New Castle-on-Tyne, England.	Building.....
New Orleans.....	Two military masts.	Sir W. G. Armstrong, Mitchell & Co., Elswick yard, New Castle-on-Tyne, England.	North Atlantic fleet

Name.	Batteries.			Protective deck.	
	Main.	Secondary.	Torpedo tubes.	Slopes.	Flat.
				Inches.	Inches.
Albany	{ 6 6" R. F. 4 4.7" R. F.	{ 10 6-pdr. R. F. 4 1-pdr. R. F. 4 Maxims 2 field guns	3	3	14
New Orleans	{ 6 6" R. F. 4 4.7" R. F.	{ 10 6-pdr. R. F. 4 1-pdr. R. F. 4 Maxims 2 field guns.....	3	3	14

States Navy—Continued.

PROTECTED CRUISERS.

Complement.	Off-icers.	Men.	Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
19	259		\$617,000	Mar. 3, 1883	July 23, 1883	Nov. 8, 1883	Oct. 9, 1884	Jan. 23, 1885	July 19, 1886
26	350		1,325,000	Aug. 3, 1886	Dec. 17, 1886	May 5, 1887	Oct. 6, 1888	June 17, 1888	Jan. 7, 1890
19	269		619,000	Mar. 3, 1883	July 23, 1883	Nov. 15, 1883	Dec. 4, 1884	Jan. 23, 1885	May 2, 1887
20	286		1,017,500	Mar. 3, 1885	Dec. 28, 1886	Jan. 30, 1887	July 19, 1888	June 28, 1888	Dec. 26, 1889
33	376		889,000	Mar. 2, 1883	July 26, 1883	Dec. 29, 1883	Dec. 5, 1885	Jan. 26, 1886	Apr. 17, 1889
20	304		*1,100,000	Sept. 7, 1886	.....	Jan., 1890	Nov. 10, 1892	.....	June 16, 1894
30	447		2,725,000	June 30, 1890	Nov. 19, 1890	Dec. 30, 1890	July 26, 1892	May 19, 1893	Apr. 23, 1894
30	447		2,000,000	Mar. 2, 1891	Aug. 31, 1891	Dec. 16, 1891	Aug. 12, 1893	Aug. 31, 1893	Dec. 13, 1894
34	350		1,248,000	Mar. 3, 1885	Oct. 27, 1887	June 12, 1888	Mar. 19, 1890	Oct. 27, 1889	Feb. 2, 1891
34	416		1,796,000	Sept. 7, 1888	July 10, 1890	June, 1891	Nov. 5, 1892	Apr. 1, 1893	Feb. 5, 1895
34	350		1,350,000	Mar. 3, 1887	Oct. 27, 1887	Mar. 22, 1888	Sept. 7, 1889	Oct. 27, 1889	July 28, 1890
20	305		*1,100,000	Sept. 7, 1886	.....	Dec., 1889	Mar. 31, 1892	.....	Apr. 17, 1894
33	350		1,428,000	Mar. 3, 1887	Oct. 26, 1887	Aug., 1888	Oct. 26, 1889	Oct. 26, 1889	Nov. 15, 1890

* Limit of cost.

Table of vessels of the United
UNARMORED STEEL VESSELS—

Name.	Rig.	By whom and where built or building.	Condition or service.
Detroit	Two - masted schooner.	Columbian Iron Works, Baltimore, Md.	North Atlantic Fleet
Marblehead.....	Two - masted schooner.	City Point Works, Boston, Mass ...	North Atlantic Fleet
Montgomery	Two - masted schooner.	Columbian Iron Works, Baltimore, Md.	North Atlantic Fleet

Name.	Batteries.			Water-tight deck.		Water-line protection, obturating material.	
	Main.	Secondary.	Torpedo tubes.	Slopes.	Flat.	Cocoa, capacity, in cubic feet.	Corn pith, capacity, in cubic feet.
Detroit	10 5" R. F. guns.	{ 6 6-pdr. R. F.... 2 1-pdr. R. F.... 2 Colts..... 1 3" R. F. field..	{ 2 White-head.	Inch. 1/2	Inch. 1/2	878	.....
Marblehead.....	10 5" R. F. guns.	{ 6 6-pdr. R. F.... 2 1-pdr. R. F.... 2 Colts..... 1 3" R. F. field..	{ 2 White-head.	Inch. 1/2	Inch. 1/2	878	.....
Montgomery.....	10 5" R. F. guns.	{ 6 6-pdr. R. F... 2 1-pdr. R. F.... 2 Colts..... 1 3" R. F. field..	{ 2 White-head.	Inch. 1/2	Inch. 1/2	878	.....

States Navy—Continued.

CRUISERS, SHEATHED WITH WOOD.

Ship fully equipped ready for sea, all stores on board. Normal coal supply.												
Length on load water line.	Extreme breadth.	Mean draft.	Displacement.	Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots per hour.	Maximum indicated horse-power.	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.	Maximum draft at lowest point of keel. Ship ready for sea, bunkers full.
Ft. In.	Ft. In.	Ft. In.	Tons.	Tons.	Tons.					Tons.	Tons.	Ft. In.
346 0	43 9	16 1½	2,437	.....	.....	Twin screw vertical inverted triple expansion.	20	7,500	.....	700	200	.....
346 0	43 9	16 10½	2,437	2,174	1,224	Twin screw vertical inverted triple expansion.	20	7,500	.....	700	200	20 2
Water-line protection, obturating material.												
Cocoa, capacity, in cubic feet.		Corn pith, capacity, in cubic feet.		Complement.		Keel laid.	Launched.	Date of purchase.		Date of first commission.		
				Officers.	Men.							
								Mar. 16, 1898		.....	
				24	383	.....	Dec. 4, 1896	Mar. 16, 1898		Mar. 16, 1898		

Table of vessels of the United
UNARMORED STEEL

Name.	Rig.	By whom and where built or building.	Condition or service.
Bancroft.....	Schooner	Moore & Sons, Elizabethport, N. J..	North Atlantic Fleet
Bennington.....	Three-masted schooner.	N. F. Palmer & Co., Chester, Pa ...	Pacific Station... ..
Castine.....	Schooner	Bath Iron Works, Bath, Me	North Atlantic Fleet
Concord	Three-masted schooner.	N. F. Palmer & Co., Chester, Pa'....	Asiatic Station
Machias	Schooner	Bath Iron Works, Bath, Me.....	North Atlantic Fleet
Petrel	Barkentine ...	Columbian Iron Works, Baltimore, Md.	Asiatic Station
Topeka*.....	Schooner	G. Howaldt, Kiel, Germany	North Atlantic Fleet
Yorktown	Three-masted schooner.	Wm. Cramp & Sons, Philadelphia, Pa.	Asiatic Station
Gunboat No. 16 .....	.....	.....	Plans being prepared.....

* Iron hull.

LIGHT-DRAFT

Helena	One military mast.	Newport News Shipbuilding and Dry Dock Co., Newport News, Va.	North Atlantic Fleet
Nashville.....	Schooner	Newport News Shipbuilding and Dry Dock Co., Newport News, Va.	North Atlantic Fleet
Wilmington	One military mast.	Newport News Shipbuilding and Dry Dock Co., Newport News, Va.	North Atlantic Fleet

State Navy—Continued.

VESSELS—GUNBOATS.

Ship fully equipped ready for sea, all stores on board. Normal coal supply				Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots per hour.	Maximum indicated horse-power	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.	Maximum draft at lowest point of keel. Ship ready for sea, bunkers full
Length on keel water line.	Extreme breadth.	Mean draft.	Displacement.									
Ft. In.	Ft. In.	Ft. In.	Tons.	Tons.	Tons.					Tons.	Tons.	Ft. In.
167 6	32 0	12 2	839	719.61	574.77	Twin screw vertical triple expansion.	14.37	1,213	9.53	100	136	12 11
230 0	36 0	14 0	1,710	1,011.72	407.50	Twin screw horizontal triple expansion.	17.5	3,436	13.73	200	403	16 7
234 0	32 1½	12 0	1,177	770.39	413.15	Twin screw vertical triple expansion.	16.032	2,190	10.84	125	292.6	14 4
230 0	36 0	14 0	1,710	1,011.72	407.50	Twin screw horizontal triple expansion.	16.8	3,405	13.72	200	401	16 7
234 0	32 1½	12 0	1,177	770.39	413.15	Twin screw vertical triple expansion.	16.46	2,046	10.84	125	292.6	14 4
178 3	31 0	11 7	692	516.79	214.97	Single screw horizontal compound.	11.79	1,095	9.28	100	200	13 5
250 0	35 0	13 4½	1,700	1,222	831	Horizontal compound.	16	2,000	.....	.....	320	14 9
230 0	36 0	14 0	1,710	1,011.72	407.50	Twin screw horizontal triple expansion.	16.14	3,392	13.73	200	380	16 7

GUNBOATS.

249 40 0½	9 0	1,307	1,302.50	1,074.14	Twin screw vertical triple expansion.	15.50	1,988	17.08	100	200	.....
230 0 30 1½	11 0	1,371	1,190.23	907.35	Twin screw vertical quadruple expansion.	16.30	2,636	13.16	150	400	.....
249 40 0½	9 0	1,307	1,302.50	1,074.14	Twin screw vertical triple expansion.	15.08	1,894	17.08	100	300	.....

Table of vessels of the United
UNARMORED STEEL

Name.	Rig.	By whom and where built or building.	Condition or service.
Bancroft.....	Schooner	Moore & Sons, Elizabethport, N. J..	North Atlantic Fleet
Bennington.....	Three-masted schooner.	N. F. Palmer & Co., Chester, Pa ...	Pacific Station... ..
Castine	Schooner	Bath Iron Works, Bath, Me	North Atlantic Fleet
Concord	Three-masted schooner.	N. F. Palmer & Co., Chester, Pa	Asiatic Station
Machias	Schooner	Bath Iron Works, Bath, Me.....	North Atlantic Fleet
Petrel	Barkentine ...	Columbian Iron Works, Baltimore, Md.	Asiatic Station
Topeka*.....	Schooner	G. Howaldt, Kiel, Germany	North Atlantic Fleet
Yorktown	Three-masted schooner.	Wm. Cramp & Sons, Philadelphia, Pa.	Asiatic Station
Gunboat No. 16.....			Plans being prepared.....

* Iron hull.

LIGHT-DRAFT

Helena	One military mast.	Newport News Shipbuilding and Dry Dock Co., Newport News, Va.	North Atlantic Fleet
Nashville.....	Schooner	Newport News Shipbuilding and Dry Dock Co., Newport News, Va.	North Atlantic Fleet
Wilmington	One military mast.	Newport News Shipbuilding and Dry Dock Co., Newport News, Va.	North Atlantic Fleet

Navy—Continued.

LS—GUNBOATS.

File Mon.	Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission
113	\$250,000	Sept. 7, 1888	July 18, 1890	Feb., 1891	Apr. 30, 1892	July 18, 1892	Mar. 3, 1893
179	490,000	Mar. 3, 1887	Nov. 15, 1887	June, 1888	June 3, 1890	May 15, 1889	June 20, 1891
149	318,500	Mar. 2, 1889	Apr. 12, 1890	Feb., 1891	May 11, 1892	Apr. 12, 1892	Oct. 22, 1894
181	490,000	Mar. 3, 1887	Nov. 15, 1887	May, 1888	Mar. 8, 1890	May 15, 1889	Feb. 14, 1891
149	318,500	Mar. 2, 1889	Apr. 12, 1890	Feb., 1891	Dec. 8, 1891	Apr. 12, 1892	July 20, 1893
112	247,000	Mar. 3, 1885	Dec. 22, 1886	Aug. 27, 1887	Oct. 13, 1888	Dec. 22, 1887	Dec. 10, 1889
					1881	* Apr. 2, 1896	
181	455,000	Mar. 3, 1885	Jan. 31, 1887	May 14, 1887	Apr. 28, 1888	Jan. 31, 1888	Apr. 23, 1889
		May 4, 1896					

* Date of purchase.

KB-OATS.

165	\$284,000	Mar. 3, 1893	Jan. 29, 1894	Oct. 11, 1894	Jan. 30, 1896	Jan. 29, 1896	July 8, 1897
165	290 000	Mar. 3, 1893	Jan. 22, 1894	Aug. 9, 1894	Oct. 19, 1895	Jan. 22, 1896	Aug. 19, 1897
165	280 000	Mar. 3, 1893	Jan. 29, 1894	Oct. 8, 1894	Oct. 19, 1895	Jan. 29, 1896	May 13, 1897

Table of vessels of the United
UNARMORED COMPOSITE

Name.	Rig.	By whom and where built or building.	Condition or service.
Annapolis	Barkentine ...	Lewis Nixon, Elizabethport, N. J..	North Atlantic Fleet.....
Marietta.....	Schooner	Union Iron Works, San Francisco, Cal.	North Atlantic Fleet.....
Newport.....	Barkentine ...	Bath Iron Works, Bath, Me.....	North Atlantic Fleet.....
Princeton.....	Barkentine ...	J. H. Dialogue & Son, Camden, N. J.	North Atlantic Fleet.....
Vicksburg.....	Barkentine ...	Bath Iron Works, Bath, Me.....	North Atlantic Fleet.....
Wheeling.....	Schooner	Union Iron Works, San Francisco, Cal.	Pacific Station.....

TRAINING

Chesapeake.....	Ship	Bath Iron Works, Bath, Me.....	Building.....
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State Navy—Continued.

VESSELS—GUNBOATS.

Complement:		Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
Officers.	Men.							
10	113	\$250,000	Sept. 7, 1886	July 18, 1890	Feb., 1891	Apr. 30, 1892	July 18, 1892	Mar. 3, 1893
16	179	490,000	Mar. 3, 1887	Nov. 15, 1887	June, 1888	June 3, 1890	May 15, 1890	June 20, 1891
11	140	318,500	Mar. 2, 1889	Apr. 12, 1890	Feb., 1891	May 11, 1892	Apr. 12, 1892	Oct. 22, 1894
13	181	490,000	Mar. 3, 1887	Nov. 15, 1887	May, 1888	Mar. 8, 1890	May 15, 1890	Feb. 14, 1891
11	140	318,500	Mar. 2, 1889	Apr. 12, 1890	Feb., 1891	Dec. 8, 1891	Apr. 12, 1892	July 20, 1893
10	112	247,000	Mar. 3, 1885	Dec. 22, 1886	Aug. 27, 1887	Oct. 12, 1888	Dec. 22, 1887	Dec. 10, 1889
						1881	* Apr. 2, 1898	
11	181	456,000	Mar. 3, 1885	Jan. 31, 1887	May 14, 1887	Apr. 28, 1888	Jan. 31, 1888	Apr. 23, 1889
			May 4, 1898					

* Date of purchase.

GUNBOATS.

10	165	\$220,000	Mar. 3, 1893	Jan. 20, 1894	Oct. 11, 1894	Jan. 30, 1896	Jan. 29, 1896	July 8, 1897
11	163	240,000	Mar. 3, 1893	Jan. 22, 1894	Aug. 9, 1894	Oct. 19, 1895	Jan. 22, 1896	Aug. 10, 1897
10	165	240,000	Mar. 3, 1893	Jan. 20, 1894	Oct. 8, 1894	Oct. 19, 1895	Jan. 20, 1896	May 13, 1897

Table of vessels of the United
UNARMORED COMPOSITE

Name.	Rig.	By whom and where built or building.	Condition or service.
Annapolis	Barkentine ...	Lewis Nixon, Elizabethport, N. J..	North Atlantic Fleet.....
Marietta.....	Schooner	Union Iron Works, San Francisco, Cal.	North Atlantic Fleet.....
Newport.....	Barkentine ...	Bath Iron Works, Bath, Me.....	North Atlantic Fleet.....
Princeton.....	Barkentine ...	J. H. Dialogue & Son, Camden, N. J.	North Atlantic Fleet.....
Vicksburg.....	Barkentine ...	Bath Iron Works, Bath, Me.....	North Atlantic Fleet.....
Wheeling.....	Schooner	Union Iron Works, San Francisco, Cal.	Pacific Station.....

TRAINING

Chesapeake.....	Ship	Bath Iron Works, Bath, Me.....	Building.....
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State Navy—Continued.

VESSELS—GUNBOATS.

Ship fully equipped ready for sea, all stores on board. Normal coal supply.				Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots per hour.	Maximum indicated horse power.	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.	Maximum draft aft at lowest point of keel. Ship ready for sea, bunkers full.
Length on load water line.	Extreme breadth.	Mean draft.	Displacement.									
<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>					<i>Tons.</i>	<i>Tons.</i>	<i>Ft. In.</i>
169 0	36 0	12 0	1,000	849.85	553.25	Single screw vertical triple expansion.	13.17	1,227	10.75	100	225	13 9
174 0	34 0	12 0	1,000	806.11	637.14	Twin screw vertical triple expansion.	13.08	1,054	10.17	120	230	.....
168 0	36 0	12 0	1,000	849.85	553.25	Single screw vertical triple expansion.	12.29	1,008	10.75	100	*239	.....
168 0	36 0	12 0	1,000	849.85	553.25	Single screw vertical triple expansion.	*12	800	10.75	100	*239	.....
168 0	36 0	12 0	1,000	849.85	553.25	Single screw vertical triple expansion.	12.71	1,118	10.75	100	*239	.....
174 0	34 0	12 0	1,000	806.11	637.14	Twin screw vertical triple expansion.	12.88	1,081	10.17	120	226

* Estimated.

SHIP.

175 0	37 0	10 6	1,175	905.27	872.07	None.....	None	10.86
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Table of vessels of the United
GUN

Name.	Batteries.			Water-tight deck.		Water-line protection obturating material.	
	Main.	Secondary.	Torpedo tubes.	Slopes.	Flat.	Cocoa, capacity in cubic feet.	Corn pith, capacity in cubicfeet.
Annapolis	6 4" R. F. guns..	{ 4 6-pdr. R. F. G.. 2 1-pdr. R. F. G.. 1 Colt..... }					
Marietta.....	6 4" R. F. guns..	{ 4 6-pdr. R. F. G.. 2 1-pdr. R. F. G.. 1 Colt..... 1 3" R. F. field .. }					
Newport.....	6 4" R. F. guns..	{ 4 6-pdr. R. F. G.. 2 1-pdr. R. F. G.. 1 Colt..... }					
Princeton.....	6 4" R. F. guns..	{ 4 6-pdr. R. F. G.. 2 1-pdr. R. F. G.. 1 Colt..... }					
Vicksburg.....	6 4" R. F. guns..	{ 4 6-pdr. R. F. G.. 2 1-pdr. R. F. G.. 1 Colt..... }					
Wheeling.....	6 4" R. F. guns..	{ 4 6-pdr. R. F. G.. 2 1-pdr. R. F. G.. 1 Colt..... 1 3" R. F. field .. }					

TRAINING

Chesapeake.....	6 4" R. F. guns..	{ 4 6-pdr. R. F 2 1-pdr. R. F }					
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UNARMORED VESSELS-

Name.	Type.	Rig.	By whom and where built or building.	Condition or service.
Dolphin	Steel dispatch boat...	Three-masted schooner.	John Roach & Sons, Chester, Pa.	North Atlantic Fleet.
Vesuvius.....	Steel dynamite gun-boat.	.....	Wm. Cramp & Sons, Philadelphia, Pa.	North Atlantic Fleet.

Name.	Batteries.			Water-tight deck.		Water-line protection obturating material.	
	Main.	Secondary.	Torpedo tubes.	Slopes.	Flat.	Cocoa, capacity in cubic feet.	Corn pith, capacity in cubic ft.
Dolphin	3 4" R. F. guns..	{ 2 14-pdr. R. F 2 6-pdr. R. F 2 3-pdr. R. F 2 Gatlings..... }					
Vesuvius.....	3 15" dynamite guns.	{ 5 3-pdr. R. F 1 Colt..... }		1/2	1/2		

States Navy—Continued.

BOATS.

Complement.		Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
Officers.	Men.							
11	124	\$227,700	Mar. 2, 1895	Nov. 20, 1895	Apr., 1896	Dec. 23, 1896	Feb. 20, 1897	July 20, 1897
11	129	223,000	Mar. 2, 1895	Nov. 26, 1895	Apr. 13, 1896	Mar. 18, 1897	Feb. 26, 1897	Sept. 1, 1897
11	124	229,400	Mar. 2, 1895	Nov. 15, 1895	Mar., 1896	Dec. 5, 1896	Feb. 15, 1897	Oct. 5, 1897
11	124	230,000	Mar. 2, 1895	Nov. 20, 1895	May, 1896	June 3, 1897	Feb. 20, 1897	May 27, 1898
11	124	229,400	Mar. 2, 1895	Nov. 15, 1895	Mar., 1896	Dec. 5, 1896	Feb. 15, 1897	Oct. 23, 1897
11	129	219,000	Mar. 2, 1895	Nov. 20, 1895	Apr. 11, 1896	Mar. 18, 1897	Feb. 26, 1897	Aug. 10, 1897

SHIP.

.....	\$112,000	(Mar. 3, 1897, July 19, 1897)	Mar. 14, 1896	Aug. 2, 1896	June 16, 1899
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SPECIAL CLASS.

Ship fully equipped ready for sea, all stores on board. Normal coal supply.																									
Length on load water line.		Extreme breadth.		Mean draft.		Displacement.		Gross tonnage.		Net tonnage.		Type of engine.		Speed in knots per hour.		Maximum indicated horse power.		Tons per inch immersion at normal draft.		Normal coal supply.		Bunker capacity.		Maximum draft aft at lowest point of keel. Ship ready for sea, bunkers full.	
Ft.	In.	Ft.	In.	Ft.	In.	Tons	Tons	Tons	Tons	Tons	Tons	Single screw vertical compound.						Tons.	Tons	Ft.	In.				
240	0	32	0	14	3	1,486	915.51	516.63				Single screw vertical compound.		15.50	2,253	13.81	.....	273.74		17	12			
252	4	20	6½	10	7½	929	579.98	98.59				Twin screw vertical triple expansion.		21.42	3,794.85	10.05	.....	152.2		11	2½			

Complement.		Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
Officers.	Men.							
1	110	\$315,000	Mar. 1, 1883	July 23, 1883	Oct. 11, 1883	Apr. 12, 1884	July 27, 1884	Dec. 8, 1885
4	82	350,000	Aug. 3, 1886	Feb. 11, 1887	Sept., 1887	Apr. 28, 1888	Feb. 11, 1888	June 7, 1890

Table of vessels of the United
UNARMORED STEEL VESSELS—

Name.	By whom and where built or building.	Condition or service.
Bainbridge.....	Neafie & Levy, Philadelphia, Pa.....	Building
Barry	Neafie & Levy, Philadelphia, Pa.....	Building
Chauncey	Neafie & Levy, Philadelphia, Pa.....	Building
Dale.....	Wm. R. Trigg Co., Richmond, Va.....	Building
Decatur	Wm. R. Trigg Co., Richmond, Va.....	Building
Hopkins	Harlan & Hollingsworth Co., Wilmington, Del.	Building
Hull	Harlan & Hollingsworth Co., Wilmington, Del.	Building
Lawrence	Fore River Engine Co., Weymouth, Mass.....	Building
Macdonough	Fore River Engine Co., Weymouth, Mass.....	Building
Paul Jones.....	Union Iron Works, San Francisco, Cal.....	Building
Perry	Union Iron Works, San Francisco, Cal.....	Building
Preble.....	Union Iron Works, San Francisco, Cal.....	Building
Stewart	Gas Engine and Power Co. and Chas. L. Seabury & Co., Consolidated, Morris Heights, N. Y.	Building
Truxtun	Maryland Steel Co., Sparrows Point, Md	Building
Whipple	Maryland Steel Co., Sparrows Point, Md.....	Building
Worden.....	Maryland Steel Co., Sparrows Point, Md.....	Building

Navy—Continued.

KID-BOAT DESTROYERS.

fully equipped ready
sea, all stores on board.
normal coal supply.

Extreme breadth.	Mean draft.	Displacement.	Gross tonnage.	Net tonnage	Type of engine.	Speed in knots per hour.	Maximum indicated horse- power.	Time per inch immersion at normal draft.	Normal coal supply	Boiler capacity	Maximum draft off at normal speed, including all stores for sea, including full supply of fuel, etc.
ft. in.	ft. in.	Tons.	Tons.	Tons.					Tons.	Tons.	ft. in.
23 7 $\frac{1}{2}$	6 6	420	.....	.....	Twin screw vertical in- verted tri- ple expan- sion.	29	2,000	2.4	25	130	.....
23 7 $\frac{1}{2}$	6 6	420	.....	.....	Twin screw vertical in- verted tri- ple expan- sion.	29	2,000	2.4	25	130	.....
23 7 $\frac{1}{2}$	6 6	420	.....	.....	Twin screw vertical in- verted tri- ple expan- sion.	29	2,000	2.4	25	130	.....
23 7 $\frac{1}{2}$	6 6	420	.....	.....	Twin screw vertical in- verted tri- ple expan- sion.	29	2,000	2.4	25	130	.....
23 7 $\frac{1}{2}$	6 6	420	.....	.....	Twin screw vertical in- verted tri- ple expan- sion.	29	2,000	2.4	25	130	.....
24 6	6 0	408	.....	.....	.....	29	7,300	9.5	25	150	.....
24 6	6 0	408	.....	.....	.....	29	7,300	9.5	25	150	.....
22 3	6 2 $\frac{1}{2}$	400	.....	.....	.....	30	2,400	8.56	24	115	.....
22 3	6 2 $\frac{1}{2}$	400	.....	.....	.....	30	2,400	8.56	24	115	.....
23 7 $\frac{1}{2}$	6 6	420	.....	.....	.....	29	7,000	9.4	25	.....	.....
23 7 $\frac{1}{2}$	6 6	420	.....	.....	.....	29	7,000	9.4	25	.....	.....
23 7 $\frac{1}{2}$	6 6	420	.....	.....	.....	29	7,000	9.4	25	.....	.....
23 7 $\frac{1}{2}$	6 6	420	.....	.....	Twin screw vertical in- verted tri- ple expan- sion.	29	2,000	2.4	25	130	.....
22 3	6 0	433	.....	.....	.....	30	2,300	9.5	25	232	.....
22 3	6 0	433	.....	.....	.....	30	2,300	9.5	25	232	.....
22 3	6 0	433	.....	.....	.....	30	2,300	9.5	25	232	.....

* Estimated.

Table of vessels of the United
UNARMORED STEEL VESSELS—

Name.	Batteries.		Complement.	
	Torpedo tubes.	Guns.	Officers.	Men.
Bainbridge	2 long 18" Whitehead	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Barry	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Chauncey	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Dale	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Decatur	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Hopkins.....	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Hull	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Lawrence	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Macdonough.....	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Paul Jones	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Perry	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Preble	2 long 18" Whitehead.	2 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Stewart	2 long 18" Whitehead.	3 12-pdr. R. F. and 5 6-pdr. R. F.	4	60
Truxtun.....	2 long 18" Whitehead.	2 12-pdr. R. F. and 6 6-pdr. R. F.	4	60
Whipple.....	2 long 18" Whitehead.	2 12-pdr. R. F. and 6 6-pdr. R. F.	4	60
Worden	2 long 18" Whitehead.	2 12-pdr. R. F. and 6 6-pdr. R. F.	4	60

Navy—Continued.

PEDO BOAT DESTROYERS.

Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
\$281,000	May 4, 1898	Oct. 1, 1898	.....	.....	Apr. 1, 1900	.....
281,000	May 4, 1898	Oct. 1, 1898	.....	.....	Apr. 1, 1900	.....
281,000	May 4, 1898	Oct. 1, 1898	.....	.....	Apr. 1, 1900	.....
280,000	May 4, 1898	.....	.....	.....	.....	.....
280,000	May 4, 1898	.....	.....	.....	.....	.....
281,000	May 4, 1898	Oct. 19, 1898	.....	.....	Apr. 19, 1900	.....
281,000	May 4, 1898	Oct. 19, 1898	.....	.....	Apr. 19, 1900	.....
281,000	May 4, 1898	Sept. 29, 1898	.....	.....	Jan. 29, 1900	.....
281,000	May 4, 1898	Sept. 29, 1898	.....	.....	Feb. 28, 1900	.....
285,000	May 4, 1898	Oct. 5, 1898	.....	.....	Apr. 5, 1900	.....
285,000	May 4, 1898	Oct. 5, 1898	.....	.....	Apr. 5, 1900	.....
285,000	May 4, 1898	Oct. 5, 1898	.....	.....	Apr. 5, 1900	.....
282,000	May 4, 1898	Sept. 29, 1898	.....	.....	Feb. 28, 1900	.....
286,000	May 4, 1898	Oct. 4, 1898	.....	.....	Apr. 4, 1900	.....
286,000	May 4, 1898	Oct. 4, 1898	.....	.....	Apr. 4, 1900	.....
286,000	May 4, 1898	Oct. 4, 1898	.....	.....	Apr. 4, 1900	.....

Table of vessels of the United

UNARMORED STEEL

Name.	By whom and where built or building	Condition or service.	Ship fully equipped ready for sea, all stores on board. Normal coal supply			
			Length on load water line.	Extreme breadth.	Mean draft.	Displacement.
			Ft. In.	Ft. In.	Ft. In.	Tons.
Bailey	Gas Engine and Power Co. and Chas. L. Seabury & Co. Consolidated, Morris Heights, N. Y.	Building.....	205 0	19 0	6 0	225
Cushing	Herreshoff Mfg. Co., Bristol, R. I.	North Atlantic Fleet.	138 9	14 3	4 10½	185
Davis	Wolff & Zwicker, Portland, Oreg.	Building.....	146 0	15 4	5 4	132
Dahlgren.....	Bath Iron Works, Bath, Me.....	Building.....	147 0	16 4½	4 7½	146.4
Du Pont.....	Herreshoff Mfg. Co., Bristol, R. I.	North Atlantic Fleet.	175 0	17 8½	4 8	165
Ericsson	Iowa Iron Works, Dubuque, Iowa	North Atlantic Fleet.	149 7	15 6	4 9	120
Farragut.....	Union Iron Works, San Francisco, Cal.	Building.....	213 6	20 7½	6 0	279
Fox	Wolff & Zwicker, Portland, Oreg.	Building.....	146 0	13 4	5 4	132
Foots	Columbian Iron Works, Baltimore, Md.	North Atlantic Fleet.	160 0	16 0½	5 0	143
Goldaborough	Wolff & Zwicker, Portland, Oreg.	Building.....	194 8	20 5	6 0	247.5
Gwin.....	Herreshoff Mfg. Co., Bristol, R. I.	North Atlantic Fleet	99 6	12 6	3 3	45.74
Mackenzie	The Chas. Hillman Co., Philadelphia, Pa.	Ready for official trial.	99 3	12 9½	4 3	65
McKee.....	Columbian Iron Works, Baltimore, Md.	North Atlantic Fleet.	99 3	12 9½	4 3	65
Morris	Herreshoff Mfg. Co., Bristol, R. I.	Newport, R. I....	188 3	15 6	4 0½	104.73
Porter.....	Herreshoff Mfg. Co., Bristol, R. I.	North Atlantic Fleet.	175 0	17 8½	4 8	165
Rodgers.....	Columbian Iron Works, Baltimore, Md.	North Atlantic Fleet.	160 0	16 0½	5 0	143
Rowan	Moran Brothers Co., Seattle, Wash.	Ready for official trial.	170 0	17 0	5 11½	162
Stringham	Harlan and Hollingsworth Co., Wilmington, Del.	Building.....	225 0	22 0	6 6	340
T. A. M. Craven ...	Bath Iron Works, Bath, Me.....	Building.....	147 0	16 4½	4 7½	146.4
Talbot	Herreshoff Mfg. Co., Bristol, R. I.	North Atlantic Fleet.	99 6	12 6	3 3½	45.5
Winslow.....	Columbian Iron Works, Baltimore, Md.	North Atlantic Fleet.	160 0	16 0½	5 0	142
Bagley	Bath Iron Works, Bath, Me.....	Building.....	157 0	17 0	4 7½	167
Barney	Bath Iron Works, Bath, Me.....	Building.....	157 0	17 0	4 7½	167
Biddle.....	Bath Iron Works, Bath, Me.....	Building.....	157 0	17 0	4 7½	167
Blakely	Lawley & Sons, South Boston, Mass.	Building.....	175 0	17 6	4 8	165

Navy—Continued.

MODELS—TORPEDO BOATS.

Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots per hour.	Maximum indicated horse-power.	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.	Maximum draft aft at lowest point of keel. Ship ready for sea, bunkers full.
Tons.	Tons.					Tons.	Tons.	Ft. In.
314.12	209.67	Twin screw vertical triple expansion.	*30	*5,000		20		
97.50	18.81	Twin screw vertical quadruple expansion.	22.5	1,720	3.10		36	5 6
129.00	26.39	Twin screw vertical triple expansion.	*22.5	*1,750	3.23	6.4		
129.00	26.39	Twin screw vertical triple expansion.	*30.5	*4,200	4.08	9	*32	
196	33.57	Twin screw vertical quadruple expansion.	28.58	*3,400	4.52	12	76	7 5
114.00	19.75	Twin screw vertical quadruple expansion.	*24	*1,800	3.56	9	35.40	5 6½
		Twin screw vertical triple expansion.	*30	*5,000	7.00		*76	
129.00	26.39	Twin screw vertical triple expansion.	*22.5	*1,750	3.23			
141.03	34.68	Twin screw vertical quadruple expansion.	24.53		4.07	9	44	
201.20	69.51	Twin screw vertical triple expansion.	*30			20	*131	
34.04	14.01	Single screw vertical triple expansion.	20.89	*850	1.87	3.3	8.6	
53.14	7.32	Single screw vertical triple expansion.	*20	*850		5	*15.3	
53.14	7.32	Single screw vertical triple expansion.	19.82	*850				
119.12	31.05	Twin screw vertical triple expansion.	24	*1,750			*28	
196	33.57	Twin screw vertical quadruple expansion.	28.630		4.52	12	76	7 5
141.03	34.68	Twin screw vertical quadruple expansion.	*24.5	*2,000	4.07	9	44	
173.08	38.42	Twin screw vertical quadruple expansion.	*26.0	*3,200	4.65	12	*60	
402.10	40.16	Twin screw vertical triple expansion.	*30	*7,200	8.03	35	*126	
129.00	26.39	Twin screw vertical triple expansion.	*30.5	*4,200	4.08	9	*32	
53.14	14.01	Single screw vertical triple expansion.	21.15	*850	1.87	3.3	8.1	
141.03	34.68	Twin screw vertical quadruple expansion.	*24.5	*2,000	4.07	9	44	
		Twin screw vertical quadruple expansion.	*28					
		Twin screw vertical quadruple expansion.	*28					
		Twin screw vertical quadruple expansion.	*28					
		Twin screw vertical quadruple expansion.	28	*3,000	5.40	10	70	

* Estimated.

Table of vessels of the United

UNARMORED STEEL VESSELS

Name.	By whom and where built or building.	Condition or service.	Ship fully equipped ready for sea, all stores on board. Normal coal supply.			
			Length or load water line.	Extreme breadth.	Mean draft.	Displacement.
De Long	Lawley & Sons, South Boston, Mass.	Building.....	<i>Ft. In.</i> 175 0	<i>Ft. In.</i> 17 6	<i>Ft. In.</i> 4 8	<i>Tons.</i> 165
Nicholson	Lewis Nixon, Elizabethport, N. J.	Building.....	174 6	17 0	4 6	174
O'Brien	Lewis Nixon, Elizabethport, N. J.	Building.....	174 6	17 0	4 6	174
Shubrick	Wm. R. Trigg Co., Richmond, Va.	Building.....	175 0	17 6	4 8	165
Stockton	Wm. R. Trigg Co., Richmond, Va.	Building.....	175 0	17 6	4 8	165
Thornton.....	Wm. R. Trigg Co., Richmond, Va.	Building.....	175 0	17 6	4 8	165
Tingey	Columbian Iron Works, Baltimore, Md.	Building.....	175 0	17 6	4 8	165
Wilkes	Gas Engine and Power Co. and Chas. L. Seabury & Co., Consolidated, Morris Heights, N. Y.	Building.....	175 0	17 6	4 8	165

TORPEDO BOAT

Manly	Yarrow				
Somers	Schichau Works, Elbing, Germany	149 3½	17 4½		1

States Navy—Continued.

TORPEDO BOATS—Continued.

Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots per hour.	Maximum indicated horse-power.	Tons per inch immersion at normal draft.	Normal coal supply.	Bunker capacity.	Maximum draft aft at lowest point of keel. Ship ready for sea, bunkers full.
Tons.	Tons.					Tons.	Tons.	Ft. In.
.....	Twin screw vertical quadruple expansion.	20	*3,000	5.40	10	70	.....
.....	Twin screw vertical quadruple expansion.	20	..	..	.....	.....	.....
.....	Twin screw vertical quadruple expansion.	20	..	.....	.....	.....	.....
.....	Twin screw vertical quadruple expansion.	20	*3,000	5.40	10	70	..
.....	Twin screw vertical quadruple expansion.	20	*4,000	5.40	10	70	.....
.....	Twin screw vertical quadruple expansion.	20	*3,000	5.40	10	70	.....
.....	Twin screw vertical quadruple expansion.	20	*3,000	5.40	10	70	..
.....	Twin screw vertical quadruple expansion.	20½	*3,000	5.40	10	70

* Estimated

PURCHASED IN 1898.

.....	Quadruple expansion.	23	1,000	30
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Table of vessels of the United
UNARMORED STEEL

Name.	Batteries.		Complement.	
	Torpedo tubes.	Guns.	Officers.	Men.
Bailey	2 18" Whitehead	4 6-pdr. R. F.		
Cushing	3 18" Whitehead	3 1-pdr. R. F.	3	20
Davis	3 18" Whitehead. Long.....	3 1-pdr. R. F.		
Dahlgren	2 18" Whitehead. Long.....	4 1-pdr. R. F.		
Du Pont.	3 18" Whitehead	4 1-pdr. R. F.		
Ericsson	3 18" Whitehead	4 1-pdr. R. F.	3	20
Farragut	2 18" Whitehead	4 6-pdr. R. F.		
Fox	3 18" Whitehead. Long.....	3 1-pdr. R. F.		
Foote	3 18" Whitehead	3 1-pdr. R. F.	4	20
Goldsborough	2 18" Whitehead. Long.....	4 6-pdr. R. F.		
Gwin	2 18" Whitehead	1 1-pdr. R. F.		
Mackenzie	2 18" Whitehead	1 1-pdr. R. F.		
McKee	2 18" Whitehead	2 1-pdr. R. F.		
Morris	3 18" Whitehead. Long.....	3 1-pdr. R. F.		
Porter	3 18" Whitehead	4 1-pdr. R. F.	4	23
Rodgers	3 18" Whitehead	3 1-pdr. R. F.	4	20
Rowan	3 18" Whitehead	4 1-pdr. R. F.	4	23
Stringham... ..	2 18" Whitehead. Long.....	7 6-pdr. R. F.		
T. A. M. Craven.....	2 18" Whitehead. Long.....	4 1-pdr. R. F.		
Talbot	2 18" Whitehead	1 1-pdr. R. F.		
Winslow	3 18" Whitehead	3 1-pdr. R. F.	4	20
Bagley	3 18" Whitehead	3 3-pdr. R. F.	3	23
Barney	3 18" Whitehead	3 3-pdr. R. F.	3	23
Biddle	3 18" Whitehead	3 3-pdr. R. F.	3	23
Blakely	3 18" Whitehead	3 3-pdr. R. F.	3	23
De Long	3 18" Whitehead	3 3-pdr. R. F.	3	23
Nicholson	3 18" Whitehead	3 3-pdr. R. F.	3	23
O'Brien	3 18" Whitehead	3 3-pdr. R. F.	3	23
Shubrick	3 18" Whitehead	3 3-pdr. R. F.	3	20
Stockton	3 18" Whitehead	3 3-pdr. R. F.	3	23
Thornton	3 18" Whitehead	3 3-pdr. R. F.	3	23
Tingey	3 18" Whitehead	3 3-pdr. R. F.	3	23
Wilkes	3 18" Whitehead	3 3-pdr. R. F.	3	23

TORPEDO BOATS

Manly				
Somers				

s Navy—Continued.

ELS—TORPEDO BOATS.

Contract price hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
\$210,000	Mar. 3, 1897	July 28, 1897	.....	.....	Jan. 28, 1899	.....
82,750	Aug. 3, 1896	Mar. 1, 1898	Apr., 1898	Jan. 23, 1899	June 1, 1899	Apr. 23, 1899
81,546	June 10, 1896	Oct. 6, 1896	Mar. 2, 1897	.....	Oct. 6, 1897	.....
194,000	June 10, 1896	Oct. 6, 1896	Dec. 11, 1897	.....	Apr. 6, 1898	.....
144,000	Mar. 2, 1895	Oct. 19, 1895	.....	Mar. 30, 1897	Nov. 19, 1896	Sept. 23, 1897
113,500	June 30, 1899	Oct. 8, 1891	July 21, 1892	May 12, 1894	Oct. 8, 1892	Feb. 18, 1897
227,500	June 10, 1896	Oct. 5, 1896	July 23, 1897	July 16, 1898	Apr. 5, 1898	.....
81,546	June 10, 1896	Oct. 6, 1896	Mar. 4, 1897	July 4, 1898	Oct. 6, 1897	.....
97,500	July 26, 1894	May 3, 1895	May 1, 1896	Oct. 1, 1896	Aug. 3, 1896	Aug. 7, 1897
214,500	Mar. 3, 1897	July 30, 1897	.....	.....	Jan. 30, 1899	.....
39,000	June 10, 1896	Oct. 6, 1896	Apr. 14, 1897	Nov. 15, 1897	Oct. 6, 1897	Apr. 4, 1898
43,500	June 10, 1896	Oct. 7, 1896	Apr. 15, 1897	Feb. 19, 1898	Oct. 7, 1897	.....
45,000	June 10, 1896	Oct. 7, 1896	Sept. 11, 1897	Feb. 5, 1898	Oct. 7, 1897	May 16, 1898
85,000	June 10, 1896	Oct. 6, 1896	Nov. 17, 1897	.....	Oct. 6, 1897	May 11, 1898
144,000	Mar. 2, 1895	Oct. 19, 1895	.....	Sept. 9, 1896	Aug. 19, 1896	Feb. 20, 1897
97,500	July 26, 1894	May 3, 1895	May 6, 1896	Nov. 10, 1896	Aug. 3, 1896	Apr. 2, 1898
100,000	Mar. 2, 1895	Oct. 19, 1895	June 22, 1896	Apr. 8, 1898	Jan. 19, 1897	.....
236,000	Mar. 3, 1897	July 29, 1897	Mar. 21, 1898	.....	Jan. 29, 1899	.....
194,000	June 10, 1896	Oct. 6, 1896	Dec. 6, 1897	.....	Apr. 6, 1898	.....
39,000	June 10, 1896	Oct. 6, 1896	Apr. 8, 1897	Nov. 14, 1897	Oct. 6, 1897	Apr. 4, 1898
97,500	July 26, 1894	May 3, 1895	May 8, 1896	Jan. 6, 1897	Aug. 3, 1896	Dec. 29, 1897
161,000	May 4, 1898	Oct. 19, 1898	.....	.....	Oct. 19, 1899	.....
161,000	May 4, 1898	Oct. 19, 1898	.....	.....	Oct. 19, 1899	.....
161,000	May 4, 1898	Oct. 19, 1898	.....	.....	Oct. 19, 1899	.....
159,400	May 4, 1898	Sept. 27, 1898	.....	.....	Sept. 27, 1899	.....
159,400	May 4, 1898	Sept. 27, 1898	.....	.....	Sept. 27, 1899	.....
165,000	May 4, 1898	Sept. 26, 1898	.....	.....	Sept. 26, 1899	.....
165,000	May 4, 1898	Sept. 26, 1898	.....	.....	Sept. 26, 1899	.....
129,750	May 4, 1898	.....	.....	.....	.....	.....
129,750	May 4, 1898	.....	.....	.....	.....	.....
129,750	May 4, 1898	.....	.....	.....	.....	.....
168,000	May 4, 1898	Oct. 1, 1898	Oct. 1, 1899
146,000	May 4, 1898	Sept. 30, 1898	Sept. 30, 1899

CHASED IN 1898.

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Table of vessels of the United
UNARMORED STEEL VESSELS—

Name.	By whom and where built or building.	Condition or service.
Plunger	Columbian Iron Works, Baltimore, Md. Contractor, J. P. Holland Torpedo Boat Co., New York, N. Y.	Building.....

WOOD TORPEDO

Stiletto.....	Herreshoff Mfg. Co., Bristol, R. I	Torpedo practice, Newport, R. I.
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SUBMARINE

Name.	Batteries.		Water-tight deck.		Complement.	
	Torpedo tubes.	Guns.	Slopes.	Flat.	Officers.	Men.
Plunger	2 Whitehead

WOOD TORPEDO

Stiletto	2 Howell
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* Estimated. Length over all.

State Navy—Continued.

SUBMARINE TORPEDO BOAT.

Ship fully equipped ready for sea, all stores on board Normal coal supply.													
Length on load water line.		Extreme breadth.		Mean draft from line tangent to bottom of screw and forefoot.		Displacement.		Gross tonnage.		Net tonnage.		Type of engine.	
Ft. In.	Ft. In.	Ft. In.	Ft. In.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Speed in knots per hour	Maximum indicated horse-power
85 2	11 6	.....	.....	168	.....	.....	.....	.....	.....	.....	.....	*8.0	*1 200 (5*)
Twin screw vertical triple expansion;													
Tons per inch immersion at normal draft.													
Normal coal supply													
Bunker capacity													
Maximum draft aft at lowest point of keel. Ship ready for sea; bunkers full.													
.....													

BOAT.

88 6	11 0	3 0	31	Single screw vertical.	12.22	300	3	4	5
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TORPEDO BOAT.

Contract price of hull and machinery.	Date of act authorizing the building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.	Date of first commission.
150,000	Mar. 3, 1893	Mar. 13, 1895	June 23, 1896	Aug. 7, 1897	Mar. 13, 1898

BOAT.

25,000
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* Also single screw operated by storage cells to supply an electric motor to propel the vessel when completely submerged at a speed of 8 knots for 6 hours.

† Indicated horsepower for 15 knots in light condition.

‡ Limit of cost.

Table of vessels of the United
IRON AND WOODEN

Name.	Built.			Condition or service.	Rig.
	When.	Where.	By whom.		
IRON.					
Alert	1873-1875	Chester, Pa	John Roach.....	Pacific Station.....	Bark.....
Monocacy	1863	Baltimore, Md ...	A. & W. Denmead & Son.	Asiatic Squadron...	Schooner ..
Michigan	1844	Erie, Pa.....	United States.....	Sp'o'l service, North- western Lakes.	Schooner ..
Pinta	1865	Chester, Pa	Reany, Son & Arch- bold.	Naval Militia, San Diego, Cal.	Schooner ..
Ranger	1873-1876	Wilmington, Del.	Harlan & Hollings- worth.	In ordinary, Mare Island, Cal.	Barkentine.
WOODEN.					
Adams	1874-1876	Boston, Mass	United States and Donald Mackay.	Training service....	Bark.....
Alliance	1873-1876	Norfolk, Va.....	United States.....	Training service....	Bark.....
Enterprise....	1873-1876	Kittery, Me.....	John W. Griffith and United States.	Public marine school, Boston, Mass.	Bark.....
Essex.....	1874-1876	Kittery and Bos- ton.	United States and Donald Mackay.	Training service....	Bark.....
Fern.....	1871	New York, N. Y .	Delamater & Stack.	Naval Militia, Washington, D.C.	Two-masted schooner.
Hartford.....	1858	Boston, Mass	United States.....	Rebuilding, Mare Island, Cal.	Bark.....
Lancaster.....	1858	Philadelphia, Pa.	United States.....	North Atlantic Fleet.	Ship.....
Mohican	1872-1883	Mare Island, Cal.	United States.....	Pacific Station.....	Bark.....

States Navy—Continued.

STEAM VESSELS.

Dimensions.			Displacement.	Gross tonnage.	Net tonnage.	Indicated horsepower.	Speed in knots per hour.	Batteries.		Bunker capacity.	Complement.	
Length between perpendiculars.	Breadth.	Mean draft.						Main.	Secondary.		Officers.	Men.
Fl. In.	Fl. In.	Fl. In.	Tons	Tons.	Tons.					Tons		
175 0	32 0	12 9	1,020	593.04	348.67	500	10	{ 2 IX" S. B. 1 60-pdr. B. L. R.	{ 2 4-pdr. 2 37" 2 Gatling 13' B. L. H.	*190	21	128
255 0	35 0	9 0	1,370			850	11.2	{ 4 VIII" S. B. 2 60-pdr. B. L. R.	{ 1 12-pdr. S. B. htz 4 37" H. R. C. 2 47" H. R. C. 2 Gatlings 6 6-pdr. R. F.	*224	12	146
163 3	27 1½	9 0	685	491.50	230.05	365	10.5		{ 2 1-pdr. R. F. 2 Gatlings	*125		80
137 0	26 0	10 0	550	355.46	201.08	310	8.5	2 12-pdr. S. B. htz.	{ 1 Colt 3 3-pdr. R. F.	*111	8	77
175 0	32 0	12 9	1,020	882.27	713.81	500	10	6 4" R. F. guns.	{ 4 6-pdr. R. F. 1 field gun 1 Colt mach. gun	*146	21	127
185 0	35 0	14 3	1,375	663.37		800	9.8	6 4" R. F. guns.	{ 4 6-pdr. R. F. 1 field gun 1 Colt mach. gun	*150	20	100
185 0	35 0	14 3	1,375			800	9.98	6 4" R. F. G.	{ 4 6-pdr. R. F. G. 2 1-pdr. R. F. G.	*150	18	100
185 0	35 0	14 3	1,375			800	11.4	13' B. L. H.	1 3-pdr. R. F.	*130		
185 0	35 0	14 3	1,375			800	10.4	6 4" R. F. G.	{ 4 6-pdr. R. F. 2 1-pdr. R. F. 1 3-pdr. R. F. 2 Colts	*130	15	172
140 0	28 0	11 9½	840	542.48	239.81	300	9	3 6-pdr. R. F.	{ 2 3-pdr. R. F. 2 1-pdr. R. F.	80	5	45
250 0	44 0	18 2	2,790	1,838.40	1,612.12	2,000	12	13 5" R. F. G.	{ 4 6-pdr. R. F. 1 3-pdr. R. F. 2 Colts	*286	32	212
238 0	46 0	19 2	3,250	2,119.64	1,892.07	1,000	9.6	{ 10 5" R. F. G. 2 5" B. L. R.	{ 6 6-pdr. R. F. 4 1-pdr. R. F. 1 3-pdr. R. F. 2 Colts	*326		265
216 0	37 0	16 6	1,900	671.20		1,100	10.65	{ 8 IX" S. B. 1 60-pdr. B. L. R.	{ 4 6-pdr. R. F. 2 37" H. R. C. 2 Colts 1 3-pdr. R. F.	*162	21	186

* Anthracite.

† Bituminous.

Table of vessels of the United

WOODEN SAIL.

Name.	Built.			Condition or service.	Rig.
	When.	Where.	By whom.		
Constellation .	1834	Norfolk, Va.....	United States.....	Stationary training ship, Newport, R. I.	Ship
Jamestown ...	1845	Norfolk, Va.....	United States.....	Transferred to Marine Hospital Service.	Ship
Monongahela .	1832	Philadelphia, Pa.	United States.....	Practice ship, Annapolis, Md.	Ship
Portsmouth ..	1843	Kittery, Me.....	United States.....	For use of naval militia, New Jersey.	Ship
Saratoga.....	1843	Kittery, Me.....	United States.....	Public marine school, Philadelphia, Pa.	Ship
St. Mary's ...	1844	Washington, D.C.	United States.....	Public marine school, New York, N. Y.	Ship. ...

STEEL, IRON AND

Name.	Built.		Material.	Condition or service.	Rig.	Dimensions.			
	Where.	By whom.				Length between perpendiculars.	Breadth.	Mean draft.	Displacement
						<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Tons</i>
Fortune ...	Boston.....	James Tetlow	Iron.	To be repaired at Norfolk, Va.	Schooner	137 0	26 0	9 6	40
Iwana	Boston.....	City Point Iron Works.	Steel	Yard tug, Boston, Mass.		93 6	20 11	8 0	12 4
Leyden	Boston.....	James Tetlow	Iron	North Atlantic Fleet.	Schooner	137 0	26 0	9 6	40
Narkeeta..	Boston.....	City Point Iron Works.	Steel	Yard tug, New York N. Y.		92 6	20 11	8 0	12 4
Nina.....	Chester, Pa.	Renny, Son & Arnold.	Iron.	Navy yard, New York N. Y.	Schooner	137 0	26 0	8 6	37
Rocket ....	.....	Purchased....	Wood	Navy yard, Boston, Mass.		55 8	16 10	7 0	15
Standish...	Boston.....	James Tetlow	Iron	Naval Academy, Annapolis, Md.	Schooner	137 0	26 0	9 6	40
Trafallo....	South Brooklyn, N. Y.	D. McCarthy	Wood	Navy yard, New York.	Derrick mast.	100 0	20 4	9 0	30
Triton.....	Camden, N. J.	John H. Dialogue.	Steel.	Yard tug, Washington, D. C.		96 2	20 9	9 0	32
Unadilla...	Mare Island, Cal.	Government	Steel	Yard tug, Mare Island.	Schooner	110 0	25 0	10 0	35
Wahneta ..	Denton.....	City Point Iron Works.	Steel	Yard tug, Norfolk		92 6	20 11	8 0	12 4
Samoaet ...	Norfolk, Va.	Government	Steel	Key West, Fla.		92 6	21 0	8 0	35
Ponacook ..	New York	Government..	Steel	Building.....	Schooner	93 6	21 1	8 9	35
Pawtucket	Mare Island, Cal.	Government..	Steel	Building	Schooner	92 6	21 1	8 9	35

States Navy—Continued.

IRON VESSELS.

Dimensions.			Displacement.	Gross tonnage.	Net tonnage.	Batteries.		Complement.	
Length between perpendiculars.	Breadth.	Mean draft.				Main.	Secondary.	Officers.	Men.
Ft. In.	Ft. In.	Ft. In.	Tons.	Tons.	Tons.				
176 0	43 0	20 0	1,386	1,235.54	1,235.54	8 VIII" S. B.	{ 2 20-pdr. B. L. R. 2 6-pdr. field 2 3" H. L. H. 1 Gatling 2 37" H. R. C.	15	173
163 6	36 0	16 0	1,150	888.23	888.23				
222 0	38 0	16 6	2,100	960.45	960.45	Landed.....	Landed	21	142
152 0	38 3	16 0	1,125	846.30	846.30	{ 11 VIII" S. B. 1 60-pdr. R. L. R.		15	
147 6	36 1	16 0	1,025	757.72	757.72				
156 0	37 6	15 6	1,025	766.84	766.84				

WOODEN STEAM TUGS.

Gross tonnage.	Net tonnage.	Indicated horse power.	Speed in knots.	Coal capacity.	Battery		Date of act authorizing building.	Contract signed.	Keel laid.	Launched.	Contract date of completion.
					Tons	Torpedo tubes.					
Tons.	Tons			Tons			1889	1890		1891	1891.
378.18	100.44	340 10		80					1895		
157.71	51.28	300 11.5		35			\$32,438 Mar. 2	Dec. 20	Apr., 1891	Mar. 12	Dec. 20
328.18	90.41	340 10		80					1896		
157.71	51.28	300 11.5		35			\$2,438 Mar. 2	Dec. 20	Apr., 1891	Feb. 11	Dec. 20
330.24	109.23	388 11 12		80					1895		
		147 8.5							1891		
330.24	109.23	340 10		80	1 6-pdr. R. F.	1			1895		
		10							1891		
		300 11		45					1898		
289.59	109.34	500 12		65			\$80,000 July 26 1894.		Apr. 20, 1895	Sept. 21 1896.	
157.71	51.28	300 11.5		35			\$2,438 Mar. 2 1889.	Dec. 20	Apr., 1891	Mar. 3 1892.	Dec. 20
157.71	51.28	450 12		37			\$25,000 Mar. 2 1895.		Jan. 13, 1895	Mar. 20 1897.	
157.71	51.28	450		37			\$50,000 Mar. 3 1897.		Feb. 8, 1898		
157.71	51.28	450		30			\$50,000 Mar. 3		July 22, 1898		

* Appropriated.

Table of vessels of the United
WOODEN STEAM VESSELS-

Name.	Built.			Condition or service.	Rig.
	When.	Where.	By whom.		
Franklin	1855-1865	Kittery, Me...	United States	Receiving ship, Nor-	Housed over..
Iroquois	1858	New York, N. Y.	United States	Transferred to Ma- rine Hospital Serv- ice.	Bark
Marion	1871-1875	Kittery, Me...	United States ....	.....	Bark
Minnesota	1853	Washington, D. C.	United States	Naval militia, Mass- achusetts.	Housed over..
Nipsic	1873-1879	Washington, D. C.	United States	Naval station, Puget Sound.	Bark
Omaha	1867-1869	Philadelphia, Pa.	United States	Transferred to Ma- rine Hospital Serv- ice.	Bark
Pensacola	1858-1862	Pensacola, Fla.	United States	Unassigned.....	Barkentine...
Richmond	1858	Norfolk, Va...	United States.....	Receiving ship, navy- yard, League Island, Pa.	Ship
Thetis .....	.....	Dundee, Scot- land.	Alex. Stephens & Sons.	.....	Bark
Wabash	1854	Philadelphia, Pa.	United States.....	Receiving ship, Bos- ton, Mass.	Housed over..
Yantic	1864	Philadelphia, Pa.	United States.....	Naval militia, Michi- gan.	Bark

CAPTURED IN SPANISH.

Name.	Type.	Rig.	By whom and where built.	Condition or service.
Alvarado	Steel gunboat.....	2 pole masts ..	Clydebank, England....	North Atlantic Fleet.
Barcelo	Torpedo boat .....	.....	Normand. Havre, France	Asiatic Station.
Callao	Steel gunboat.....	Schooner	Cañacaa	Asiatic Station.
Infanta Maria Teresa.	Steel armored cruiser.	2 mil. masts...	Bilbao	Being repaired..
Leyte	Iron gunboat .....	.....	Whampoa, Hongkong...	Asiatic Station.
Manila	Iron transport.....	.....	Leith	Asiatic Station.
Mindanao	Wooden gunboat .....	.....	Cartagena	Asiatic Station.
Sandoval	Steel gunboat.....	2 pole masts ..	Clydebank, England	North Atlantic Fleet.

See Navy—Continued.

FIT FOR SEA SERVICE.

Dimensions.								Propulsion.		Coal capacity, tons.	Officers, Men.	
Length overall, perpendiculars.	Breadth.	Mean draft.	Displacement.	Gross tonnage.	Net tonnage.	Indicated horsepower.	Speed in knots per hour.	Main.	Secondary.			
ft.	in.	ft.	in.	Tons.	Tons.	Tons.				Tons.		
100	9	54	3	24	3	5,170	2,172.37	1,000	9	4 IX' S.B.	1 12-pdr. S.B.	100
100	10	23	10	15	2	1,575	696.28	1,202	10.7	Battery loaded	Battery loaded *125	
206	0	27	0	16	6	1,000		1,100	11.25	{ 60 S.B. 10 M.L.R. 100-pdr. B.L.R.	{ 12 B.L.R. 230-pdr. B.L. 235 H.R.C. 1 Gatling 23 B.L.H. 230-pdr. B.L. 3 12-pdr. S.B.	{ 135 15 150
304	4	51	4	23	0	4,700	2,911.51	1,000	9.25	{ 6 IX' S.B. 100-pdr. B.L. R.	{ 230-pdr. B.L. 235 H.R.C. 1 Gatling 23 B.L.H. 230-pdr. B.L. 3 12-pdr. S.B.	
125	0	25	0	14	3	1,375		620	10.7	4 IX'		132
130	0	20	0	16	6	2,400	1,002.56	950	11.3	Battery loaded	Battery loaded	
120	1	44	6	16	7	3,000	1,908.16	600	9	Battery loaded	Battery loaded *205	
125	0	42	6	17	4	2,700	1,364.94	602	9.5		20-pdr. R.F.G	130
100	0	30	3	18	0	1,250		530	7.55	150—H.R.C.		300 10 97
100	1	51	4	23	0	4,650	2,917.80	950	9.15		20-pdr. R.F.	116
100	0	30	0	12	2	900		310	2.30	Battery loaded	Battery loaded.†120	20 121

Anthracite.

Bituminous.

* Anthracite.

† Bituminous.

AMERICAN WAR.

Length		Extreme breadth		Mean draft.		Displacement.		Gross tonnage.		Net tonnage.		Propulsion.		Speed in knots per hour.		Maximum indicated horsepower.		Tons per inch immersion at normal draft.		Normal coal supply.		Bunker capacity		Maximum draft at lowest point of keel. Ship ready for sea, bunkers full.	
ft.	in.	ft.	in.	ft.	in.	Tons.	in.	Tons.	in.	Tons.	in.														
100	9	15	5	4	11	100						Single screw		19		137						11			
126	7	11	0	6	11	66						Single screw		17		600						19			
129	1	17	7	6	8	206						Twin screw		9	7	250						32			
201	5	26	0	21	6	7,000						Twin screw		20	4	13,700						1,050			
60	5	16	6	7	3	151						Twin screw		4		150						25			
202	2	29	10	13	3	1,900						Single screw		9		750						204			
103	3	17	10	5	6	83						Twin screw		8		110						18			
100	0	15	5	4	11	100						Single screw		19		137						11			

• *Table of vessels of the United*
CAPTURED IN SPANISH.

Name.	Batteries.	Torpedo tubes.
Alvarado	{ 1 57 ^{mm}	2
Barcelo	{ 1 37 ^{mm}	
Callao.....	{ 2 mach., 25 ^{mm}	
	{ 1 Hontoria, 3".5	
	{ 1 Hontoria, 2".75	
	{ 2 Nordenfelt, 11 ^{mm}	
Infanta Maria Teresa.....	{ 2 11" Hontoria.....	8
	{ 10 5".5 Hontoria	
	{ 8 57 ^{mm} Hotchkiss	
	{ 8 37 ^{mm} Hotchkiss	
	{ 2 11 ^{mm} Nordenfelt.....	
	{ 2 2".75 bronze.....	
Leyte.....	{ 1 Hontoria, 3".5	
	{ 1 Hontoria, 2".75	
	{ 2 Nordenfelt, 11 ^{mm}	
Manila.....	{ 2 bronze guns	
Mindanao	{ 1 bronze rifle, 4".8	
	{ 1 mach., 11 ^{mm}	
Sandoval.....	{ 1 57 ^{mm}	
	{ 1 37 ^{mm}	

WOODEN SAILING VESSELS

Name.	Built.			Condition or service.	Rig.
	When.	Where.	By whom.		
Constitution..	1797	Boston, Mass..	United States.....	In ordinary, Boston, Mass. Centennial, Oct. 21, 1897.	Housed over..
Dale	1839	Philadelphia, Pa.	United States.....	Naval militia, Baltimore, Md.	Housed over..
Independence.	1837	Boston, Mass..	United States.....	Receiving ship, Mare Island, Cal.	Housed over..
New Hampshire.	1818	Kittery, Me...	United States.....	Naval militia, New York, N. Y.	Ship
St. Louis.....	1828	Washington, D. C.	United States.....	Naval militia, Philadelphia, Pa.	Housed over..
Vermont.....	1818	Boston, Mass..	United States.....	Receiving ship, New York, N. Y.	Housed over..

late Navy—Continued.

AMERICAN WAR.

Armor.			Protective deck.		Complement	Keel laid	Launched	Date of capture.	Date of first commission in U. S. Navy.
Side.	Turrets.	Barricade.	Slopes.	Flat.					
Inches.	In.	In.	In.	In.					
.....	33	.....	1865	.....	.....
.....	18	.....	1866	.....	Aug. 12 1866
.....	25	.....	1866	.....	July 2 1866
10 to 12	9.8	.....	.....	2	497	.....	1866	.....	.....
.....	25	.....	1867	.....	.....
.....	11	.....	1868	.....	July 20 1868
.....	25	.....	1871	.....	.....
.....	33	.....	1880	.....	.....

—FIT FOR SEA SERVICE.

Dimensions.							Batteries.		
Length between perpendiculars.	Breadth.		Mean draft.		Displacement.	Gross tonnage.	Net tonnage.	Main.	Secondary.
ft.	in.	ft.	in.	ft.	in.	Tons.	Tons.	Tons.	
175	0	45	0	20	0	2,200	.....	.....	4 32-pdr. S. B. 1 12-pdr. S. B. howtz.
117	7	33	10	14	9	675	.....	.....
160	0	51	6	21	6	3,270	1,891.26	1,891.26	3 20-pdr. S. B. 1 12-pdr. S. B. (heavy.)
196	3	53	0	25	6	4,150	.....	.....	2 20-pdr. B. L. R. ..
128	6	32	6	15	6	830	.....	.....
196	3	53	0	25	6	4,150	.....	.....	1 12 pdr. S. B. H ..

Table of vessels in
MERCHANT VESSELS CONVERTED

Name.	Material.	Rig.	Built.		
			When.	Where.	By whom.
Badger	Steel....	Schooner ...	1889	Chester, Pa	John Roach & Son....
Buffalo	Steel....	.....	1892	Newport News, Va	Newport News S. B. & D. D. Co.
Dixie	Steel....	Schooner ...	1893	Newport News, Va	Newport News S. B. & D. D. Co.
Harvard	Steel....	Three-mast- ed schoon- er.	} 1888 1889	} Glasgow, Scotland	J. & G. Thompson....
Panther	Iron	Schooner ...			
Prairie.....	Iron	Schooner ...	1890	Philadelphia, Pa.....	Wm. Cramp & Sons..
St. Louis.....	Steel....	Schooner ...	1895	Philadelphia, Pa.....	Wm. Cramp & Sons..
St. Paul.....	Steel....	Schooner ...	1895	Philadelphia, Pa.....	Wm. Cramp & Sons..
Yale	Steel....	Three-mast- ed schoon- er.	} 1888 1889	} Glasgow, Scotland	J. & G. Thompson....
Yankee	Iron	Four-mast- ed schoon- er.			
Yosemite	Iron	Schooner ...	1892	Newport News, Va	Newport News S. B. & D. D. Co.

Name.	Type of engine.	Speed in knots.	Indicated horse- power.	Bunker capacity.
Badger	Single screw vertical inverted triple expan- sion.	16	3,200	<i>Tons.</i> 836
Buffalo	Single screw triple expansion	14.5	3,600	1,000
Dixie	Single screw triple expansion	16	3,800	1,371
Harvard	Twin screw triple expansion	21.8	20,600	2,656
Panther	Single screw triple expansion	13	.....	475
Prairie	{ Single screw vertical inverted triple expan- sion.	} 14.5	3,800	1,000
St. Louis.....				
St. Paul.....	Twin screw quadruple expansion	22	20,000	2,677
Yale.....	Twin screw triple expansion.....	21.8	20,600	2,656
Yankee.....	{ Single screw vertical inverted triple expan- sion.	} 14.5	3,800	1,000
Yosemite.....				

auxiliary Navy.

INTO AUXILIARY CRUISERS.

Condition or service.	Length.	Breadth.	Mean draft.	Displacement.	Gross tonnage.	Net tonnage.
	<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
North Atlantic Fleet.....	325 6	42 0	18 6	4,784	3,498	2,332
Unassigned	320 6	43 0	22 0	6,888	4,650	2,901
Eastern Squadron.....	320 2	43 0	19 11	6,114	4,664.88	2,905.48
Military transport	527 6	63 2	23 0	13,090	10,600	5,530
North Atlantic Fleet.....	310 0	40 0	18 3 $\frac{1}{2}$	4,380	2,843	2,037
North Atlantic Fleet.....	300 6	46 10	22 0	6,572	4,522	3,021
Special.....	525 6	63 0	23 0	14,910	11,620	5,894
Special.....	525 6	63 0	23 0	14,910	11,620	5,894
Military transport	527 6	63 2	23 0	13,090	10,600	5,490
Eastern Squadron.....	* 320 6	43 0	22 0	6,888	4,650	2,901
Eastern Squadron.....	320 2	43 0	20 1	6,179	4,650	2,921

* Between perpendiculars.

Batteries.		Complement.		First commission in U. S. Navy.
Main.	Secondary.	Officers.	Men.	
65' R. F. G.....	63-pdr	19	316	Apr. 22, 1898
25' R. F. G.....	20—Colt	17	280	.....
44' R. F. G.....	66-pdr			
100' R. F. G.....	{ 66-pdr	14	167	Apr. 19, 1898
85' R. F. G.....	{ 2 Colt			
65' R. F. G.....	86-pdr	26	381	.....
65' R. F. G.....	{ 63-pdr	13	185	Apr. 22, 1898
24' R. F. G.....	{ 1 Colt			
100' R. F. G.....	{ 12' field	18	267	Apr. 14, 1898
65' R. F. G.....	{ 66-pdr. R. F.			
65' R. F. G.....	{ 2 Colt	24	357	Apr. 20, 1898
65' R. F. G.....	{ 6-pdr			
85' R. F. G.....	{ 63-pdr	25	381	.....
85' R. F. G.....	{ 42-pdr			
105' R. F. G.....	{ 46-pdr	15	267	Apr. 14, 1898
105' R. F. G.....	{ 66-pdr			
105' R. F. G.....	{ 2 Colt	18	267	Apr. 13, 1898
105' R. F. G.....	{ 66-pdr			

Table of vessels in aural
CONVERTED

Name.	Material.	Rig.	Built.		
			When.	Where.	By whom.
Aileen	Steel.....	Schooner ...	1896	Chester, Pa.....	John Roach.....
Buccaneer	Steel.....	Schooner ...	1888	Boston, Mass	Richard Keogh.....
Dorothea	Steel.....	Schooner ...	1897	Philadelphia, Pa.....	Wm. Cramp & Sons...
Eagle.....	Steel.....	Schooner ...	1890	Wilmington, Del.....	Harlan & Hollingsworth.
Elfrida	Steel.....	Schooner ...	1889	Wilmington, Del.....	Harlan & Hollingsworth.
Enquirer .....	.....	Schooner ...	1896	Buffalo, N. Y.....	Union Dry Dock Co...
Free Lance.....	Steel.....	Schooner ...	1895	Elizabethport, N. J....	Lewis Nixon.....
Frolic	Steel.....	Schooner ...	1892	Cleveland, Ohio.....	Globe Iron Works....
Gloucester.....	Steel.....	Schooner ...	1891	Philadelphia, Pa.....	Neafie & Levy.....
Hawk	Steel.....	Schooner ...	1891	Paisley, Scotland.....	Fleming & Ferguson..
Hist	Steel.....	Schooner ...	1896	Philadelphia, Pa.....	Wm. Cramp & Sons...
Hornet	Steel.....	Schooner ...	1890	Wilmington, Del.....	Harlan & Hollingsworth.
Huntress	Composite	Schooner ...	1895	Nyack on Hudson, N. Y.	Chas. L. Seabury & Co
Kanawha.....	Composite	Schooner ...	1896	Nyack on Hudson, N. Y.	Chas. L. Seabury & Co
Inca	Wood.....	Schooner ...	1898	South Boston, Mass....	George Lawley & Sons
Mayflower.....	Steel.....	Brigantine ..	1896	Clydebank, Scotland...	J. and G. Thompson...
Onelda.....	Wood.....	Schooner ...	1896	Bath, Me	Bath Iron Works.....
Restless	Iron	Schooner ...	1887	Chester, Pa	Houston & Woodbridge
Scorpion.....	Steel.....	Schooner ...	1896	South Brooklyn, N. Y..	John N. Robins.....
Shearwater.....	Steel.....	Schooner ...	1887	East Boston, Mass....	Atlantic Works
Siren	Steel.....	Schooner ...	1897	Leith, Scotland	Hawthorn & Co.....
Stranger.....	Iron	Schooner ...	1880	Philadelphia, Pa.....	Wm. Cramp & Sons...
Sylph.....	Steel.....	Schooner ...	1898	Chester, Pa	John Roach.....
Sylvia	Iron	Schooner ...	1882	Glasgow, Scotland	A. Stephen & Sons....
Viking	Iron	Schooner ...	1883	Chester, Pa	John Roach.....
Vixen	Steel.....	Schooner ...	1896	Elizabethport, N. J.	Lewis Nixon
Wasp.....	Steel.....	Schooner ...	1898	Philadelphia, Pa.....	Wm. Cramp & Sons...
Yankton.....	Steel.....	Schooner ...	1893	Leith, Scotland	Ramage & Ferguson..

ary navy—Continued.

YACHTS.

Condition or service.	Length.	Breadth.	Meandraft.
	<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>
Auxiliary Naval Force.....	120 0	20 0	8 0
Unassigned.....	* 116 0	20 0	9 3½
North Atlantic Fleet.....	182 4	23 4½	11 5½
North Atlantic Fleet.....	155 6	24 0	11 6
Auxiliary Naval Force.....	102 0	18 0	9 6
In ordinary, New York.....	* 130 2	17 8½	7 0
Auxiliary Naval Force.....	* 109 0	20 0	8 6
North Atlantic Fleet.....	* 165 0	25 0	10 3½
North Atlantic Fleet.....	* 204 0	27 2	12 0
North Atlantic Fleet.....	* 145 0	22 0	11 6
North Atlantic Fleet.....	174 0	23 0	9 10
North Atlantic Fleet.....	* 180 0	24 0	11 0
Auxiliary Naval Force	* 97 0	16 0	7 3
Unassigned.....	* 114 0	18 0	7 0
Auxiliary Naval Force	96 6	16 3	7 0
North Atlantic Fleet	* 275 0	36 0	17 2½
North Atlantic Fleet	* 110 11	18 6	7 6
Auxiliary Naval Force	* 13 0	16 0	7 6
North Atlantic Fleet	110 6	28 1	11 6
.....	* 108 0	18 0	7 3½
North Atlantic Fleet	* 123 0	19 2	11 0
North Atlantic Fleet	* 173 6	23 9½	10 8
Special Service.....	* 123 8	20 0	7 6
North Atlantic Fleet	* 130 0	16 6	10 0
North Atlantic Fleet	* 122 0	21 0	8 6
North Atlantic Fleet	* 182 3	28 0	12 8
North Atlantic Fleet	* 180 0	23 0	12 0
North Atlantic Fleet	* 185 0	27 6	13 10

* On water line.

Table of vessels in auxil
CONVERTED

Name.	Displace- ment.	Gross tonnage.	Net ton- nage.	Type of engine.	Speed in knots.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>		
Aileen	192	151. 33	71. 17	Single screw vertical triple expansion..	14
Buccaneer .....	.....	159. 92	79. 96	Single screw vertical triple expansion..	.....
Dorothea	594	433. 18	252. 30	Single screw vertical triple expansion..	15
Eagle	434	364. 75	213. 99	{ Single screw vertical inverted triple expansion.	15. 5
Elfrida	* 173	122. 64	68. 35	Single screw triple expansion.....	10. 5
Enquirer	136	144. 36	95. 45	Single screw triple expansion.....	20
Free Lance	197	132. 52	90. 12	Single screw direct acting triple ex- pansion.	16. 5
Frolic	607	357. 21	190. 01	{ Single screw vertical inverted triple expansion.	11
Gloucester	786	561	250	{ Single screw vertical inverted triple expansion.	17
Hawk	375	270	99	Two engines quadruple expansion.....	14. 5
Hist	472	312	170	Single screw vertical compound.....	14. 5
Hornet	425	301. 89	195. 89	{ Single screw vertical inverted triple expansion.	15
Huntress	81. 76	85	55	Single screw vertical inverted triple expansion.	14
Kanawha	* 175	126. 93	86. 32	Single screw triple expansion	14
Inca .....	.....	94	53	Single screw triple expansion	14
Mayflower	2, 690	1, 800	1, 009	Twin screw triple expansion.....	16. 8
Oneida	150	118. 90	39. 85	{ Single screw vertical inverted triple expansion.	12
Restless	137	104. 87	52. 44	Single screw triple expansion	12
Scorpion	850	627. 60	426. 77	{ Twin screw vertical inverted triple expansion.	17. 85
Shearwater .....	.....	109. 01	55. 02	Single screw compound.....	.....
Siren	* 315	102	66	Single screw vertical triple expansion.	13
Stranger	* 546	247. 40	123. 70	Single screw compound.....	14
Sylph	152	172	100	Single screw vertical triple expansion.	15
Sylvia	* 302	136. 08	56. 72	Single screw compound.....	9
Viking	218	141. 38	71. 39	Single screw vertical compound	11. 75
Vixen	806	545. 59	369. 11	Single screw vertical triple expansion.	16
Wasp	630	380	190	Single screw inverted triple expansion.	16. 5
Yankton	* 975	541. 45	272. 01	Single screw vertical triple expansion.	14

* Estimated.

Army navy—Continued.

TACITUS—Continued.

Indicated horse- power.	Bunker capacity.	Battery.	Complement.		First commis- sion in U. S. Navy.
			Officers.	Men.	
500	45	1 3-pdr. 2 6" 2 1 pdr.	3	30	May 14, 1898
1,558	90	4 6-pdr. 2 3-pdr. 4 1 pdr.	6	63	June 1, 1898
1,850	85	4 6-pdr. 2 Colts	4	60	Mar. 26, 1898
1,200	33	2 37" 2 1 pdr.	4	15	June 30, 1898
1,035	18	2 1 pdr.	4	14	June 22, 1898
800	22	2 Gatlinga	2	18	May 11, 1898
	100	2 3 pdr. 2 47" R. C.	7	37	July 6, 1898
2,000	120	4 6-pdr. 4 3-pdr. 2 Colts	9	85	May 30, 1898
1,000	70	2 6-pdr. 2 1 pdr. 2 Colts	4	46	April 5, 1898
	60	1 3 pdr. 4 1 pdr. 1 Colt.	8	50	May 13, 1898
1,800	65	3 6-pdr. 2 1 pdr. 2 6" Colts. 2 37" R. C.	4	51	April 12, 1898
	17	2 Colts	4	16	July 1, 1898
	20	1 3-pdr. 3 1 pdr. 2 6" Colts.	3	22	July 26, 1898
400	25	1 1 pdr. 1 Gatling 2 5 R. F. G.	3	18	Aug. 1, 1898
4,700	584	12 6 pdr. 2 6" Colts.			
350	20	1 6 pdr. 4 1 pdr. 1 6" Gatling	3	22	Apr. 30, 1898
1,500	16	6 6 pdr. 2 6" Colts.	3	30	May 14, 1898
2,800	200	6 6 pdr. 2 6" Colts.	6	103	Apr. 11, 1898
	45	3 3 pdr. 1 3 pdr. 3 1 pdr.	5	37	June 24, 1898
	30	1 14 pdr. 2 4 pdr. 2 1 pdr.	8	49	June 30, 1898
550	47	6 6 pdr. 2 1 pdr. 3 3 pdr.			
	60	1 1 pdr. 2 6" Colts.	5	31	June 29, 1898
420	40	1 3 pdr. 3 6" Colts.	3	40	May 11, 1898
1,250	190	4 6-pdr. 4 1 pdr.	6	76	Apr. 11, 1898
1,800	108	2 6 pdr. 2 Colts	4	51	Apr. 11, 1898
750	170	6 3 pdr. 2 Colts	8	70	May 16, 1898

† Nominal horsepower.

Name.	Material.	Rig.	Built.		
			When.	Where.	By whom.
Accomac	Iron ....	.....	1891	Newport News, Va....	Newport News Shipbuilding and Dry Dock Co.
Active.....	Steel ...	Light-signal mast.	1888	San Francisco, Cal.....	Union Iron Works....
Alice	Wood...	One mast and one derrick.	1893	Tompkins Cove, N. Y.	.....
Apache	Wood...	Two masts and derrick.	1889	Tottenville, N. Y.....	A. C. Brown.....
Cheyenne.....	Wood...	.....	1885	Charleston, S. C.....	.....
Chickasaw	Iron ....	.....	1882	Camden, N. J.....	.....
Choctaw	Iron ....	.....	1892	Philadelphia, Pa.....	Neafie & Levy.....
Hercules	Iron ....	.....	1888	Camden, N. J.....	John H. Dialogue & Son.
Iroquois	Steel ...	Schooner ...	1892	San Francisco, Cal....	Union Iron Works....
Massasoit	Steel ...	.....	1898	Philadelphia, Pa.....	Neafie & Levy.....
Modoc	Iron ....	.....	1890	Camden, N. J.....	John H. Dialogue & Son.
Mohawk.....	Steel....	.....	1893	Newburg, N. Y.....	T. S. Marvel & Co.....
Nezinscot.....	Steel....	.....	1897	Philadelphia, Pa.....	Neafie & Levy
Osceola	Steel....	Schooner ...	1896	Philadelphia, Pa.....	Charles Hillman.....
Pawnee.....	Wood....	.....	1896	Tompkins Cove, Long Island.	Roderwald & Co.....
Piscataqua	Steel....	Two pole masts.	1897	West Bay City, Mich..	F. W. Wheeler & Co..
Pontiac .....	.....	.....	1891	Athens, N. Y.....	Peter McGiehan.....
Potomac	Steel....	Schooner ...	1897	West Bay City, Mich..	F. W. Wheeler & Co..
Powhatan	Steel....	.....	1892	Baltimore, Md.....	Maryland Steel Co....
Seminole.....	Iron	Schooner ...	1879	Baltimore, Md.....	R. M. Spedden.....
Sioux .....	.....	.....	1892	Philadelphia, Pa.....	Neafie & Levy
Takoma.....	Steel....	.....	1893	Camden, N. J.....	John H. Dialogue & Son.
Tecumseh	Steel....	Schooner ...	1896	Camden, N. J.....	John H. Dialogue & Son.
Uncas	Steel....	Schooner ...	1893	Camden, N. J.....	John H. Dialogue & Son.
Vigilant .....	.....	Schooner ...	1883	Philadelphia, Pa.....	Wm. Cramp & Sons.
Waban	Iron ....	.....	1880	Philadelphia, Pa.....	.....
Wompatuck.....	Iron	Schooner ...	1896	Wilmington, Del.....	Harlan & Hollingworth.

Navy—Continued.

TUGS.

Condition or service.	Length.		Breadth.		Mean draft.	
	<i>Ft.</i>	<i>In.</i>	<i>Ft.</i>	<i>In.</i>	<i>Ft.</i>	<i>In.</i>
Key West, Fla.....	90	0	19	0	9	0
.....	100	0	22	6	10	8
.....	101	9	25	6	8	0
North Atlantic Fleet.....	141	6	29	0	10	0
Auxiliary Naval Force.....	96	9½	23	2½	9	6
Auxiliary Naval Force.....	77	2½	18	0	8	0
Auxiliary Naval Force.....	91	4½	21	0	10	0
Key West, Fla.....	101	6	20	6	9	0
San Francisco, Cal.....	145	0	26	0	12	2
Key West, Fla.....	*87	9	19	0	8	6
.....	*96	9	20	8	9	3
.....	†104	0	24	0	11	0
Key West, Fla.....	†85	0	19	0	8	0
North Atlantic Fleet.....	125	5	26	3	14	0
.....	112	0	27	3	7	0
North Atlantic Fleet.....	†143	4	28	0	12	6
New York, N. Y.....	124	4	27	0	9	6
Auxiliary Naval Force.....	†132	4	28	0	12	0
Auxiliary Naval Force.....	†101	0	21	0	10	0
Unassigned.....	102	6	20	0	8	6
Key West, Fla.....	†84	0	19	0	8	0
Auxiliary Naval Force.....	99	0	21	0	.....	.....
North Atlantic Fleet.....	88	6	21	6	9	3
North Atlantic Fleet.....	119	3	25	0	12	0
San Francisco, Cal.....	107	0	21	0	9	2
Auxiliary Naval Force.....	85	0	17	6	.....	.....
North Atlantic Fleet.....	117	6	25	6	12	.....

* On water line.

† Between perpendiculars.

Table of vessels in Auxiliary

CONVERTED

Name.	Displacement.	Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>		
Accomac	187	180.16	65.08	Single screw vertical quadruple expansion.	10
Active	296	174	87	Single screw double acting compound..	12
Alice	356	154.78	87.11	Single screw vertical compound	10
Apache	650	298.3	160.6	Single screw vertical triple expansion.	10
Cheyenne		144.91	76.17	Vertical compound	11
Chickasaw		70.02	35.01	Single screw vertical compound	10
Choctaw		152	76	Single screw compound	10
Hercules	198	142	71	Single screw vertical triple expansion.	12
Iroquois	702	400	200	Single screw vertical triple expansion.	12.25
Massasoit	202.45	150.7	75.35	Single screw vertical compound	
Modoc	240.76	184.09	92.08	Single screw vertical compound	10
Mohawk	420	160.87	80	Single screw surface condensing compound.	12
Nezinsot	156	117.74	83.27	Single screw vertical inverted compound.	10
Osceola	571	352.35	239.69	Single screw vertical triple expansion..	14
Pawnee	275	151.78	103.27	Single screw compound	10
Piscataqua	631	428	320	Single screw inverted direct acting surface condensing triple expansion.	14
Pontiac	401	238.25	137.48	Single screw vertical compound	10.5
Potomac	677	500	277	Single screw inverted direct acting surface condensing triple expansion.	18
Powhatan	194	156	78	Single screw triple expansion	12
Seminole		122.79	61.40	Single screw compound	
Sioux	155	111.38	55.69	Single screw vertical compound	10
Takoma		130	65	Single screw vertical triple expansion.	12
Tecumseh	214	149.55	95.19	Single screw vertical inverted triple expansion.	11
Uncas	441	283.69	141.85	Single screw triple expansion	12
Vigilant	300	177	89	Single screw compound	12
Waban		85.50	42.75		
Wompatuck	462	323.52	181.88	Twin screw vertical triple expansion..	13

Navy—Continued.

TUGS—Continued.

Indicated horse- power.	Bunker capacity.	Battery.	Complement.		First com- mission in U. S. Navy.
			Officers.	Men.	
	Tons.				
250	35	{ 1 6-pdr R. F.	1	11	Apr. 2, 1898
		{ 1 6 ^{mm} Colt.			
		{ 1 Gatling			
600	80	{ 2 3" B. L. R.		21	July 6, 1898
		{ 2 37 ^{mm} R. C.			
		{ 2 6-pdr R. F.			
250	15	{ 2 4" R. F.		44	Apr. 6, 1898
		{ 2 3-pdr R. F.			
		{ 2 Gatling			
550	120		4		June 11, 1898
	20	{ 1 3" B. L. R.			
		{ 1 3-pdr R. F.			
		{ 1 1-pdr R. F.			
188	70	{ 1 37 ^{mm} R. C.	2		Apr. 12, 1898
		{ 1 3-pdr			
		{ 1 1-pdr R. F.			
	40	{ 1 37 ^{mm} R. C.	1		
		{ 4 3" B. L. R.			
		{ 1 Gatling			
1,000	205	{ 2 37 ^{mm} R. C.		37	July 6, 1898
		{ 1 1-pdr			
		{ 1 1-pdr			
	24		3		June 21, 1898
	40			7	
400	32				Apr. 23, 1898
		{ 1 6-pdr	2	13	Apr. 2, 1898
		{ 1 Colt.			
		{ 2 6-pdr			
	150	{ 1 47 ^{mm}	3	27	
		{ 1 Gatling			
		{ 1 37 ^{mm} R. C.			
* 250	16				Apr. 27, 1898
1,000	300	{ 2 9-pdr	5	32	June 18, 1898
		{ 2 37 ^{mm} R. C.			
		{ 2 6-pdr			
425	45	{ 1 1-pdr			Apr. 2, 1898
		{ 2 6-pdr			
		{ 2 1-pdr			
2,000	200	{ 1 3-pdr	2	31	Apr. 5, 1898
		{ 1 37 ^{mm}			
		{ 1 3-pdr			
397	57				
	42	{ 1 3-pdr	2	16	July 21, 1898
		{ 2 6 ^{mm} Colt.			
		{ 1 6-pdr			
300	45	{ 1 Colt.	1	3	Apr. 9, 1898
		{ 1 6-pdr			
		{ 1 6-pdr			
	30	{ 1 1-pdr	2	13	Apr. 6, 1898
		{ 1 Gatling			
		{ 1 37 ^{mm} R. C.			
* 500	40		2		Apr. 6, 1898
* 750	120	{ 1 Gatling	2	26	Apr. 6, 1898
		{ 2 3" B. L. R.			
		{ 1 Gatling			
450	75	{ 2 47 ^{mm} R. C.	2	30	Apr. 6, 1898
		{ 1 3" B. L. R.			
		{ 1 3-pdr			
650	130	{ 1 Gatling	2	30	Apr. 6, 1898

* Nominal horsepower.

Table of vessels in Auxiliary

STEAMERS CONVERTED

Name.	Material.	Rig.	Built.		
			When.	Where.	By whom.
Abarenda.....	Steel....	Schooner....	1892	Newcastle, England...	Edwards S. B. Co....
Alexander.....	Steel....	Schooner....	1894	Stockton-on-Tees.....	Richardson Duck & Co
Brutus.....	Steel....	Schooner....	1894	South Shields, England	J. Readhead & Sons..
Cæsar.....	Steel....	Schooner....	1896	Stockton-on-Tees.....	Ropner & Son.....
Cassius.....	Steel....	3 masted schooner	1883	Hamburg.....	Reiberstieg Ship Yard
Hannibal.....	Steel....	Schooner....	1896	Sunderland, England..	J. Blumer & Co.....
Hector.....	.....	Schooner....	1883	Newcastle, England..	Wigham, Richardson & Co.
Justin.....	Steel....	Schooner....	1891	Middleboro-on-Tees, England.	R. Dixon & Co.....
Lebanon.....	Iron.....	Schooner....	1894	Philadelphia, Pa.....	Wm. Cramp & Sons..
Leonidas.....	Steel....	Schooner....	1896	Sunderland, England	S. P. Austin & Son, Limited.
Marcellus.....	Iron.....	Schooner....	1879	Sunderland, England..	Mounsey & Foster....
Nanshan.....	Steel....	.....	1896	Grangemouth, Scotland.	Grangemouth Dockyard Company
Nero.....	Steel....	Schooner....	1895	Sunderland, England..	J. L. Thompson & Son, Limited.
Pompey.....	Steel....	Schooner....	1897	Sunderland, England	S. P. Austin & Son, Limited.
Saturn.....	Iron.....	Schooner....	1890	Wilmington, Delaware.	Harlan & Hollingsworth.
Scindia.....	Steel....	Schooner....	1890	Glasgow, Scotland.....	D. and W. Henderson & Co.
Scipio.....	Steel....	Schooner....	1882	Dumbarton, Scotland..	Wm. Denny & Bros...
Southery.....	Iron....	Schooner....	1889	Sunderland, England..	R. Thompson Sons & Co.
Sterling.....	Iron....	Schooner....	1881	Port Glasgow, Scotland	Duncan & Co.....

Name.	Displacement.	Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots.
	Tons.	Tons.	Tons.		
Abarenda.....	4,570	3,125	2,009	Single screw vertical triple expansion.	9
Alexander.....	5,181	3,250	2,091	Single screw vertical triple expansion.	9
Brutus.....	.....	3,077	1,992	Single screw vertical triple expansion.	14
Cæsar.....	5,015	2,738	1,738	Single screw triple expansion.....	10
Cassius.....	.....	3,458	2,182	.....	.....
Hannibal.....	4,291	1,785	1,115	Single screw triple expansion.....	10
Hector.....	.....	2,792	1,892	.....	10
Justin.....	3,300	2,206	1,419	Single screw vertical compound.....	8.5
Lebanon.....	.....	1,486	1,157	Single screw vertical triple expansion	10
Leonidas.....	4,242	1,802	1,123	Single screw triple expansion.....	11
Marcellus.....	.....	1,960	1,327	Single screw compound inverted vertical.	11
Nanshan.....	.....	2,300	1,344	.....	.....
Nero.....	.....	2,125	1,045	Single screw vertical triple expansion.	10
Pompey.....	3,055	1,282	765	Single screw triple expansion.....	10
Saturn.....	5,320	2,563	1,817	Single screw triple expansion.....	12.5
Scindia.....	7,500	4,534	2,963	Single screw vertical triple expansion	13
Scipio.....	5,864	3,256	2,045	Single screw compound.....	14.5
Southery.....	3,100	2,068	1,347	Single screw vertical triple expansion	8
Sterling.....	5,653	2,616	1,482	Single screw vertical triple expansion.	11

Navy—Continued.

INTO COLLIERIES.

Condition or service.			Length.	Breadth.	Meandraft.
			<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>
Eastern Squadron.....			314 0	42 0	22 6
Eastern Squadron.....			830 0	43 0	23 1
Asiatic Squadron.....			821 5	41 5	23 3
North Atlantic Fleet.....			310 0	44 0	19 6
Eastern Squadron.....			351 1½	43 0	26 0
North Atlantic Fleet.....			264 6	39 3	17 8
Special service.....			830 2½	38 3½	22 0
North Atlantic Fleet			*278 0	39 0	19 6
North Atlantic Fleet			†249 0	36 0	17 9
North Atlantic Fleet			261 6	39 2½	17 8
.....			282 6	35 10	20 6
Asiatic Squadron.....			285 0	39 1	
Asiatic Squadron.....			312 0	41 0	
North Atlantic Fleet			234 0	33 6	15 10
North Atlantic Fleet			275 0	40	22 0
Eastern Squadron			375 0	46 2	24 6
Special service.....			383 0	40 0	23 6
North Atlantic Fleet			†288 0	38 9½	18 3
North Atlantic Fleet			274 0	37 0	23 0

Indicated horse-power.	Bunker capacity.	Cargo capacity for coal.	Battery.	Complement.		First commission in United States Navy.
				Officers.	Men.	
	<i>Tons.</i>	<i>Tons.</i>				
1,050	827	3,843	4 3-pdr	9	60	May 20, 1898.
1,026	800	4,200	2 3-pdr	8	60	June 1, 1898.
1,200	747	.....	2 6-pdr	9	55	May 27, 1898.
1,500	381	.....	{ 2 3-pdr	6	48	May 13, 1898.
			{ 2 1-pdr			
.....	880	2,897	2 R. C.	8	68	June 6, 1898.
1,100	550	.....	2 D. S.	8	42	June 7, 1898.
.....	750	2,600	2 6-pdr	7	74	June 30, 1898
.....	167	2,900	2 6-pdr	6	47	Apr. 27, 1898
.....	250	1,800	4 6-pdr	5	53	Apr. 16, 1898
1,000	550	.....	2 3-pdr	7	45	May 21, 1898
1,200	210	2,400	2 6-pdr .....	.....	.....
.....	.....	.....	.....	1	.....
1,000	.....	.....	4 3-inch B. L. R.....	9	.....	June 8, 1898
.....	238	.....	2 6-pdr	5	37	May 26, 1898
1,500	391	.....	2 6-pdr	7	64	Apr. 11, 1898
3,000	450	4,550	2 6-pdr	10	98	May 21, 1898
2,422	834	.....	.....	7	.....
.....	380	300	.....	6	46	Apr. 30, 1898
‡926	460	.....	2 6-pdr	5	55	Apr. 16, 1898

*On water line.

†Between perpendiculars.

‡Estimated.

Name.	Mate- rial.	Type.	Rig.	Built.		
				When.	Where.	By whom.
Arctic		Ice boat.....		1873	Philadelphia, Pa.	Wood, Dialogue & Co.
Arethusa	Steel..	Tank steamer.....		1893	Stockton	Craig, Taylor & Co.
Celtic.....	Steel..	Supply ship...	Schooner ...	1891	Belfast, Ireland.	Workman, Clark & Co., Lim- ited.
City of Pekin.....	Iron ..	Transport		1874	Chester, Pa	John Roach & Son.
Culgoa.....	Steel..		Schooner ...	1890	Sunderland, Eng- land.	J. L. Thompson & Son.
East Boston	Wood.	Ferryboat con- verted into auxiliary gunboat.		1892	East Boston, Mass.	Atlantic Works and W. Mc- Kee.
Glacier	Steel..	Refrigerator ship.	Ship.....	1891	Sunderland, Eng- land.	J. L. Thompson & Son.
Governor Russell..	Wood.	Ferryboat con- verted into auxiliary gunboat.		1898	East Boston, Mass.	Atlantic Works and W. Mc- Kee.
Iris	Steel..	Distilling ship	Brigantine..	1885	Newcastle, Eng- land.	A. Leslie & Co..
Niagara	Iron ..	Distilling ship	Schooner ...	1877	Chester, Pa.....	John Roach & Son.
Peoria	Steel..	Pilot boat con- verted into auxiliary gunboat.	Schooner ...	1897	Philadelphia, Pa.	Neafie & Levy..
Rainbow.....	Steel..	Distilling ship	Schooner ...	1890	Sunderland, Eng- land.	James Laing....
Resolute.....	Steel..	Transport	Schooner ...	1894	Chester, Pa.....	John Roach.....
Solace	Steel..	Ambulance ship.	Schooner ...	1896	Newport News, Va.	Newport News S. B. & D. D. Co
Supply	Iron ..	Supply ship ..	Brig	1873	Philadelphia, Pa.	Wm. Cramp & Sons.
Vulcan	Iron ..	Repair ship...	Schooner ...	1885	Philadelphia, Pa.	American Ship- building Co.
Zafiro	Steel..	Supply ship ..		1884	Aberdeen, Scot- land.	Hall Russell & Co.

Name.	Displace- ment.	Gross tonnage.	Net tonnage.	Type of engine.	Speed in knots.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>		
Arctic	1, 357. 74	936. 66	655. 66	Horizontal direct acting.....	
Arethusa		3, 319	2, 132		
Celtic.....	6, 428	3, 738	2, 429	Single screw triple expansion	10
City of Pekin.....		5, 080	3, 129	Single screw vertical compound	14
Culgoa.....		3, 325	2, 135		
East Boston	631	732	606	Compound.....	9.5
Glacier		4, 154	2, 667	Single screw triple expansion	12.5
Governor Russell..	631	713	485	Double compound	9
Iris	6, 100	2, 716	1, 747. 43	Single screw compound vertical	10½
Niagara	5, 221	2, 265. 28	1, 667. 60	Single screw vertical compound.....	12
Peoria	487. 5	335	161	Vertical compound	
Rainbow.....	6, 206	2, 985	1, 935	Single screw vertical triple expansion.	12
Resolute.....	4, 175	2, 898. 28	2, 126	Single screw vertical triple expansion.	16
Solace	4, 700	3, 801	2, 632	Single screw vertical inverted triple expansion.	15
Supply	4, 460	3, 341	2, 568	Single screw inverted triple expansion.	9.66
Vulcan	3, 530	2, 729	1, 909	Single screw compound.....	
Zafiro.....		1, 062	675		

* On water line.

(Between perpendiculars.

auxiliary Navy—Continued.

CLASS.

Condition or service.		Length.		Breadth.		Mean draft.	
		<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>
Unassigned.....		198	6	33	3	12	0
		332	0	42	2		
North Atlantic Fleet		374	3	44	0	24	9
Asiatic Squadron.....		423	0	48	0	24	0
		335	0	43	0		
North Atlantic Fleet		163	0	57	0	9	3
Unassigned.....		253	6	46	1½	25	0
North Atlantic Fleet		157	0	57	0	9	4½
North Atlantic Fleet		310	0	28	6	24	0
North Atlantic Fleet		1274	0	38	0	19	6
North Atlantic Fleet		130	0	25	0	10	6
Unassigned.....		340	0	41	1	24	0
North Atlantic Fleet		1307	6	40	0	18	0
North Atlantic Fleet		368	2	44	0	17	1½
North Atlantic Fleet		342	7	43	0	20	0
North Atlantic Fleet		285	4	40	0	17	3
Asiatic Squadron.....		213	8½	31	9½		

Indicated horse- power.	Bunker capacity.	Battery.	Complement.		Date first commission in United States Navy.
			Officers.	Men.	
	<i>Tons.</i> 243	{ 1 60-pdr..... 2 47 ^{mm} R. C..... }	2		July 9, 1898
1,800	1,130		16	87	May 27, 1898
	2,458	2 3-pdr.....	10		
550	150	{ 2 3" B. L. R..... 2 3-pdr..... }	6	60	July 5, 1898
	1,075	3 3" B. L. R.....	8	74	July 5, 1898
500	150	{ 1 3" B. L. R..... 4 3-pdr..... }	6	60	June 24, 1898
1,300	480		7		Aug. 1, 1898
1,000	512	2 6-pdr.....	6	51	Apr. 16, 1898
	68	{ 4 3-pdr. H..... 2 37 ^{mm} H..... 1 Colt..... }	6		May 15, 1898
1,000	916				July 18, 1898
	165	2 6-pdr.....	14	73	May 11, 1898
1,200	880		12	110	Apr. 14, 1898
1,000	457.5	2 3" B. L. R.....	10		
		2 6-pdr.....	13	184	May 22, 1898
			1		

1 Estimated.

6 Nominal horsepower.

Table of vessels in Auxiliary Navy.

REVENUE CUTTERS.

Name.	Displace- ment.	Material.	Indicated horse- power.	Propul- sion.	Guns.	Station.
Algonquin.....					b 2	North Atlantic Fleet.
Calumet	174				b 2	Do.
Corwin	424	Wood.....				Pacific Station.
Grant	407	Iron		Single screw.		Do.
Gresham.....	906	Steel.....		do		North Atlantic Fleet.
Hamilton	250	Iron		do	a 1	Do.
Hudson.....	174	Steel.....	524. 67	do	b 3	Do.
Manning	980	Comp.....	2, 000	do	a 3	Do.
McCulloch.....	1, 280	do		do		Asiatic Station.
McLane	346	Iron				North Atlantic Fleet.
Morrill	397	do		Single screw.	a 2	Do.
Perry.....	534	do				Pacific Station.
Rush	695					Do.
Windom.....	525	Steel.....	800	Single screw.	a 1	North Atlantic Fleet.
Woodbury.....	370	Wood.....			b 7	Do.

LIGHT-HOUSE TENDERS.

Armeria.....	1, 600				b 2	North Atlantic Fleet.
Mangrove	620				b 2	Do.
Maple	700				a 2	Do.
Suwanee.....	2, 185				a 2	Do.

FISH COMMISSION VESSELS.

Albatross.....						Pacific Station.
Fish Hawk						North Atlantic Fleet.

a Secondary-battery guns.

b Main-battery guns.

; Estimated.

SUMMARY SHOWING THE NUMBER OF VESSELS IN THE UNITED STATES NAVY.

REGULAR NAVY.

FIRST-CLASS BATTLE SHIPS	12
SECOND-CLASS BATTLE SHIP.....	1
ARMORED CRUISERS	2
ARMORED RAM	1
DOUBLE-TURRETED MONITORS.....	6
STEEL SINGLE-TURRET MONITORS.....	4
IRON SINGLE-TURRET MONITORS.....	13
PROTECTED CRUISERS.....	13
PROTECTED CRUISERS SHEATHED WITH WOOD	2
UNPROTECTED CRUISERS.....	3
GUNBOATS	9
LIGHT-DRAFT GUNBOATS.....	3
COMPOSITE GUNBOATS.....	6
TRAINING SHIP (NAVAL ACADEMY).....	1
SPECIAL CLASS	2

TORPEDO-BOAT DESTROYERS.....	16
STEEL TORPEDO BOATS.....	35
SUBMARINE TORPEDO BOAT.....	1
WOOD TORPEDO BOAT.....	1
CAPTURED IN SPANISH-AMERICAN WAR.....	8
IRON CRUISING VESSELS.....	5
WOODEN CRUISING VESSELS.....	8
SAILING VESSELS.....	6
TUGS.....	14
WOODEN STEAM VESSELS UNFIT FOR SEA SERVICE.....	11
WOODEN SAILING VESSELS UNFIT FOR SEA SERVICE.....	6

TOTAL NUMBER OF VESSELS IN REGULAR NAVY... 189

AUXILIARY NAVY.

MERCHANT VESSELS CONVERTED INTO AUXILIARY CRUISERS.....	11
CONVERTED YACHTS.....	28
CONVERTED TUGS.....	27
STEAMERS CONVERTED INTO COLLIERS.....	19
SPECIAL CLASS.....	17
REVENUE CUTTERS.....	15
LIGHT-HOUSE TENDERS.....	4
UNITED STATES FISH COMMISSION.....	2

TOTAL NUMBER OF VESSELS IN AUXILIARY NAVY... 123

GRAND TOTAL..... 312

WORK ON VESSELS UNDER CONSTRUCTION.

[Extracts from Reports of Naval Constructors.]

U. S. S. Kearsarge.—This vessel was launched March 24, 1898, and work on her is progressing in a satisfactory manner. Her stem, stern casting, rudder post, rudder, stern framing, and keelson plates, transverse framing below protective deck, transverse framing between armor shelf, protective deck, and main deck, bow plates, outside plating below protective deck, outside plating between armor shelf, protective deck, and main deck, upper-deck beams, main-deck beams, berth-deck beams, protective-deck beams, platform-deck beams, splinter-deck beams, upper-deck stringer plates, upper-deck tie plates, main-deck plating, main-deck stringer angles, berth-deck stringer angles and staple angles, protective-deck stringer angles and staple angles, splinter-deck stringer angles and staple angles, platform-deck stringer angles and staple angles, longitudinal bulkheads, manhole frames, stanchions, upper-deck waterway angles, water tanks, metal work of docking keels, bilge keels, engine and other foundations, shaft-tube and strut castings, fire main, steering-engine seatings, main drain, splinter bulkheads, steering gear, rudder-foundation casting, windlass and engine, capstan foundations, anchor beds, warping and towing bitt foundations, mooring staples, and foundations for bower anchor chain stoppers are completed.

Armor plates for the side, belt, protective deck, bulkheads, casemates, superstructure, barbottes, and turrets have been received and are being fitted in place.

The hammock berthings, plating behind side armor, riveting of main-deck plating, angle bars to hatches, riveting of berth-deck plating, protective-deck plating, splinter-deck plating, platform-deck plating, riveting of manhole frames, transverse bulk-

heads, riveting of bulkhead frames, riveting of longitudinal bulkheads, riveting of stanchions other than those below protective deck, cofferdams, hatch coamings and covers, fitting of fire main, conning-tower foundation, windlass house, and coal chutes are well advanced.

While the large amount of work yet to be done renders it impossible to exactly estimate the time of completion of this vessel, it is thought possible to have the contractor's trial in May, 1899, and that the vessel can be completed by August, 1899, provided no delay occurs in the delivery of ordnance material for the turrets. It is estimated that on the 30th of June last the vessel was 61.4 per cent completed.

U. S. S. Kentucky.—This vessel was launched March 24, 1898, and work on her is progressing in a satisfactory manner. Her stem, stern casting, rudder-post casting, rudder, stern-framing and keelson plates, transverse framing below protective deck, transverse framing between armor shelf, protective deck, and main deck, bow plates, outside plating below protective deck, outside plating between armor shelf, protective deck, and main deck, upper-deck beams, main-deck beams, berth-deck beams, protective-deck beams, splinter-deck beams, platform-deck beams, skid beams, upper-deck stringer plates, upper-deck tie plates, plates over splinter bulkheads and about hatches, masts, and coal chutes, angles to hatches on upper deck, upper-deck stringer angles, main-deck plating, main-deck stringer angles, berth-deck plating, berth-deck stringer angles and staple angles, protective-deck stringer angles and staple angles, splinter-deck stringer angles and staple angles, platform-deck stringer angles and staple angles, water-tight manhole frames, bulkhead frames, longitudinal bulkheads below protective deck, longitudinal coal-bunker bulkheads between berth and main decks, stanchions, upper-deck waterway angles, fresh-water tanks, metal work of docking keels, bilge keels, engine and other foundations, shaft tube and strut castings, steering-engine seatings, main drain, fire main, splinter bulkheads, steering gear, rudder-foundation casting, windlass and windlass engine, capstan foundations, anchor beds, warping and towing bitt foundations, mooring staples, and foundations for lower anchor chain stoppers are completed.

Armor plates for the side, belt, protective deck, bulkheads, casemates, superstructure, barbettes, and turrets have been received and are being fitted in place.

The hammock berthings, plating behind side armor, riveting of main-deck plating, riveting of angle bars to hatches, riveting of berth-deck plating, protective-deck plating, splinter-deck plating, platform-deck plating, riveting of manhole frames, transverse bulkheads, riveting of bulkhead frames, riveting of longitudinal bulkheads, fitting and riveting of stanchions other than those below protective deck, cofferdams, hatch coamings and covers, fitting of fire main, conning-tower foundation, windlass house, and coal chutes are well advanced.

While the large amount of work yet to be done renders it impossible to exactly estimate the time of completion of this vessel, it is thought possible to have the contractors' trial in May, 1899, and that the vessel can be completed by August, 1899, provided no delay occurs in the delivery of ordnance material for the turrets. It is estimated that on the 30th of June last this vessel was 61.1 per cent completed.

U. S. S. Illinois.—This vessel is practically ready for launching. The framing and plating behind side belt and side casemate armor is completed. That of the superstructure and barbette armor is well advanced and can be completed with dispatch. Her flat keel, vertical keel, stem and stern castings, rudder post, transverse framing below protective deck, framing behind side belt and casemate armor, framing behind 12-inch diagonal armor, outside plating below protective deck, splinter-deck beams and platform-deck beams, flat keelson, inner bottom plating, longitudinals, metal work of docking keels, bilge keels, shaft tubes, steering gear, and windlass are completed.

Her framing abaft the armor belt, outside plating above protective deck, upper-deck beams, berth-deck beams, protective-deck beams, upper-deck stringer plates, main-deck plating, berth-deck plating, protective-deck plating, splinter-deck plating, platform-deck plating, transverse bulkheads, water-tight doors, longitudinal bulkheads, boiler saddles, condenser engine and other foundations, cofferdam, and hatches are well advanced.

The vessel has been ready to receive her side armor since February 18, 1898. Plans for the armor were forwarded to the armor contractors July 1, 1898, and they are allowed nine months for the delivery of armor from the date of the receipt of the plans. While the large amount of work to be done, coupled with the delay in the delivery of the armor, renders it impossible to make an exact estimate as to the time of the completion of this vessel, it is thought to be possible to have the contractor's trial in January, 1900, and to complete the vessel by April 1, 1900, provided the armor is delivered within nine months after the receipt of the plans by the armor contractors. It is estimated that the vessel on the 30th of June last was 48.7 per cent completed.

U. S. S. Alabama.—The first keel plate of this vessel was laid December 2, 1896. She was launched May 18, 1898. During the past year her flat and vertical keels,

transverse framing and outside plating, inner bottom, longitudinals, armor shelf, framing behind side armor, bow framing, transverse bulkheads, decks, splinter bulkheads, foundations for steering gear and main engines, condensers, pumps, anchors and windlass, chain lockers, docking and bilge keels, shaft struts, stern tubes and rudder, diagonal armor and backing, fitting drains and sounding pipes have been brought to completion.

Her longitudinal bulkheads above and below the protective deck, deck stanchions, foundations for boilers, dynamo, water tanks, hammock berthings, engine and fire room latches, cooling and other tanks, framing and plating behind barquette armor, 13-inch turrets, deck planking, armor gratings, windlass and engine, fitting of water-tight doors, hatches and manhole covers, warping and towing bitts and chocks, mounting staples and hawse pipes, fire main, scuppers, painting and cementing, etc., have been brought to varying degrees of completion.

It is estimated that on the 30th of June last the vessel was 60 per cent completed. The contractors' trial final completion, and delivery of the vessel to the Government will depend entirely upon the delivery of the armor and armament, and the ship should be ready for final delivery to the Government within two months after the receipt of the armor and armament at the shipbuilding yard.

U. S. S. Wisconsin. During the past year 2,444 tons of material were worked into the hull of this vessel, making a total, up to June 30 last, of 3,026 tons.

Her flat keel plates, vertical keel, stem, transverse framing as follows: within double bottom above double bottom and below armor shelf, throughout magazine space behind armor throughout machinery and boiler spaces, behind the diagonal armor, platform deck beams, splinter deck beams, magazine-flat-deck beams, magazine-flat-deck plating, flat keelson plates, inner bottom, longitudinals, and seating for steering arrangements are completed.

Her stern and rudder post, rudder, transverse framing before and abaft the double bottom, below the armor shelf, transverse framing behind main armor belt before and abaft machinery spaces, transverse framing abaft the armor belt, outside plating, upper deck beams, main-deck beams, berth deck beams, protective-deck beams, half beams and carlings, main deck plating, berth deck plating, protective-deck plating and ships' protective-deck plating at ends of ship, splinter-deck plating, armor gratings, platform and hold plating, transverse bulkheads, water-tight doors, longitudinals, bulkheads, magazines, docking keels, bilge keels, engine, boiler and shaft bearings, cofferdams, shaft tubes and struts, trimming tanks, chain lockers, hatch coamings, diagonal armor, armor for turrets and barbettes for 13-inch guns, steering arrangements, deck pipes, hawse pipes, warping chocks, warping and towing bitts, coaling scuttles and cuttes, manhole scuttles, and bow stoppers are partially completed.

The last of the four 12-inch diagonal armor plates was received on January 24, 1898, and is now ready for fitting in place.

If there are no unforeseen delays this vessel will probably be ready for final delivery to the Government by September 19, 1899. It is estimated that on June 30 last the vessel was 40 per cent completed.

U. S. S. Albany. This vessel purchased from the Brazilian Government at the time the *New Orleans* was purchased, is now being completed at the works of Sir William G. Armstrong, Mitchell & Co., Newcastle-on-Tyne, England. On the 30th of June last the framing and plating had been well advanced and the work of sheathing the bottom had been begun. The work upon the top side plating, deck plating, etc., was well in hand. The total weight of material worked into the vessel at that date amounted to about 1,300 tons.

U. S. S. Chesapeake.—The greater portion of the material for the construction of the hull of this vessel has been received at the building yard. The ship has been laid down on the mold loft floor, the keel blocks laid, and several of the construction drawings completed.

U. S. torpedo boat Rowan.—The keel of this vessel was laid on the 22d of June, 1896, and the vessel launched April 8, 1898. Her flat and vertical keels, keelson, stem, rudder, shaft tubes and struts, transverse framing, main deck, fore-castle deck, outside plating, bulkheads, stanchions, hatches, coamings and covers, doors, water tanks, conning towers, deck fittings, interior fittings, platforms, furniture, ladders, boats, copectage, and miscellaneous fittings have been completed. The laying of hull-in-painting, and the completion of the ship's outfit, and a few interior fittings are well on toward completion. The vessel is at present about 99 per cent completed and should be ready for her official trip as soon as the proper crew can be obtained.

U. S. torpedo boat Dahlgren.—Some difficulty has been experienced in obtaining the material for the construction of this vessel, and the work has been delayed accordingly. Her stem, sternpost, shaft brackets and tubes, keel, frames, bulkheads, keelsons, deck beams, deck plating, shell plating, conning tower, water tanks, boilers, engine and boiler foundations, and stern tubes have been completed. The

riveting of deck, hatch coamings and covers, doors, rudder and tillers, conning tower, painting, and drainage system are well advanced toward completion. It is estimated that the vessel is 80 per cent completed, and that she will be ready for the contractors' trial by October 1, 1898, and for final delivery to the Government November 15, 1898.

U. S. torpedo boat T. A. M. Craven.—Some difficulty has been experienced in obtaining the material for the construction of this vessel, and the work has been accordingly delayed. Her stem, stern post, frames, bulkheads, deck beams, conning tower, water tanks, and a portion of the fittings have been completed. The galley, hatch covers, doors, rudder, windlass and steering gear, drainage system, and the general fittings are partially completed. It is estimated that on the 30th of June, 1898, the vessel was 60 per cent completed, and that she should be ready for contractors' trial by November 1, 1898, and for final delivery December 15, 1898.

U. S. torpedo boat Farragut.—Work upon this vessel has proceeded very satisfactorily during the past year. On June 30, 1898, her flat keel plates, vertical keel, stem, stuffing box and rudder bearing, rudder, shaft tubes and struts, transverse framing, main, turtle-back, and windlass deck beams; windlass and turtle-back deck plating, outside plating, keelsons, fore and aft bulkheads, engine, boiler and shaft bearers, boats, and cooperage were completed. The berth-deck beams, cabin-deck beams, deck plating, galvanizing, stanchions, hatches and skylights, water-tight doors, conning towers, woodwork, steering apparatus, water tanks, platforms and gratings, furniture, warping chocks, electric-light plant, and cleaning and painting have been partially completed. It is estimated that the vessel is 88 per cent completed, and if there are no unforeseen delays she will probably be ready for her official trial by July 25, 1898, and ready for delivery to the Government by August 6, 1898.

NOTE.—This vessel was damaged on contractors' trials and is now undergoing repairs.

U. S. torpedo boat Daris.—The keel of this vessel was laid March 2, 1897, and she was launched June 4, 1898. Her keel plate, stem, stern post, rudder, outside plating, transverse bulkheads, deck beams, longitudinal bulkheads and sliding doors, boiler foundations, coaling scuttles and manholes, shaft tubes and struts, water tanks, towing and warping bitts, and deck plating have been completed. The riveting of deck plating, engine foundations, conning towers, hatchways, doors, stanchions, steering gear, windlass, drainage system, joiner work, furniture, boat, and painting and cementing are well advanced toward completion. It is estimated that this vessel on June 30 last was 94 per cent completed, and that she will be ready for trial August 22, 1898, and for delivery to the Government September 22, 1898.

U. S. torpedo boat For.—The keel of this vessel was laid on March 4, 1897. Her keel plate, stem, stern post, outside plating, transverse bulkheads, deck beams, longitudinal bulkheads, coaling scuttles and manholes, shaft tubes and struts, bowl chock and anchor davit, boat davits, towing and warping bitts, and propeller guards have been completed. Her rudder, riveting of deck plating, engine and boiler foundations, auxiliary machinery foundations, conning towers, hatchways, water-tight doors, stanchions, steering gear, windlass, drainage system, water tanks, woodwork, furniture, boat, cooperage, and painting and cementing are well advanced toward completion. It is estimated that on June 30 last this vessel was 88 per cent completed. It is expected that she will be ready for trial by September 12, 1898, and for delivery to the Government October 12, 1898.

U. S. torpedo boat Mackenzie.—This vessel was on June 30, 1898, practically completed and ready for her official speed trial, there being only a few unimportant items of fittings, outfit, etc., to complete.

U. S. torpedo boat Stringham.—The keel of this vessel was laid in March, 1898, and on June 30, 1898, the flat and vertical keel, cast and forged steel stem, transverse framing, upper-deck beams, turtle-back beams, transverse bulkheads, longitudinal bulkheads, and engine and boiler bearers had been completely erected and in large part riveted. The lower-deck beams and outside plating were partially completed. It is estimated that this vessel is 35 per cent completed.

U. S. torpedo boat Goldsborough.—The contract for this vessel was signed July 30, 1897. The steel plate, angles, and rivets have been received. The structural detail drawings are over three fourths completed and various important items of work well under way. It is estimated that the vessel is 15 per cent completed. The contract time for her completion expires January 30, 1899.

U. S. torpedo boat Bailey.—The work on this vessel has progressed very slowly during the past year. On the 30th of June, 1898, the keel had been laid and the frames and transverse bulkheads erected and riveted. Work upon the outside plating and deck plating, longitudinal bulkheads, etc., was well in hand. All the steel material necessary for the building of the vessel has been delivered at the contractors' yard. It is estimated that the vessel is 12 per cent completed, and that she should be ready

for her speed trial on January 10, 1899, and for delivery to the Government two weeks after a successful trial.

Submarine torpedo boat Plunger.—The work on this vessel has progressed very slowly during the past year. It is estimated that on the 30th of June last she was 73 per cent completed. It is impossible to make any reliable estimate of the date of her final completion and delivery to the Government.

Penacook.—On account of the slow delivery of material, work upon this vessel was not begun until February, 1898. On the 30th of June, 1898, the plans, keel, stem, sternpost, transverse framing, deck beams, engine foundation, etc., had been completed, and outside plating, stringer plating, transverse bulkheads, deck house, rudder, general fittings, joiner work, and painting had been taken in hand and advanced to varying degrees of completion. It is estimated that the vessel was on the date given 20 per cent completed and that she should be finally completed about November 1, 1898.

Panucket.—On account of the slow delivery of material, work upon this vessel was not begun until February, 1898, and subsequently it was necessary to lay aside the work upon this vessel and to take some of the material which had been delivered for it for shipment to the Asiatic fleet. On June 30, 1898, the stem, sternpost, keel, and frames, transverse bulkhead plating, decking for deck house, pilot house, steering gear, and miscellaneous fittings had been taken up in the shops and brought to varying degrees of completion. It is estimated that this vessel is 18 per cent completed and that work upon her should be finished by October 15, 1898.

REPORT OF CHIEF OF BUREAU OF STEAM ENGINEERING.

DEPARTMENT OF THE NAVY.
BUREAU OF STEAM ENGINEERING,
Washington, D. C., October 1, 1898.

SIR: In obedience to your order of July 11, 1898, the following annual report of the operations of this Bureau during the past year, together with the estimates for the fiscal year ending June 30, 1900, is respectfully submitted.

APPROPRIATION, STEAM MACHINERY, 1898.

Amount appropriated for fiscal year ending June 30, 1898; act approved March 3, 1897	\$735,000.00
Deficiency appropriation; act approved January 28, 1898	250,000.00
Deficiency appropriation; act approved July 7, 1898	1,245,000.00
Appropriated for six months beginning July 1, 1898; act approved July 7, 1898	4,005,000.00
Allotment from national-defense fund	430,613.50
Total	6,665,613.50
Labor in navy-yards and stations in repair of steam machinery, boilers, etc., of naval vessels fitting for sea service, preservation and repair of tools, handling and preservation of materials, stores, etc	\$822,065.16
Purchase of materials, stores, machine tools, freight, and incidental expenses	801,910.81
Payments of labor and materials furnished and performed by private contractors outside the navy-yards and stations for repairs of machinery of 20 naval vessels, in emergency	205,108.87
Payments for repairs, materials, freight, and incidental expenses for ships on foreign stations	93,588.47
Total	1,922,673.31
Less repayments by transfers in adjustment of appropriations	619.08
Total expenditure	1,922,054.23
Balance in Treasury September 1	4,743,559.27

GENERAL OPERATIONS OF THE BUREAU.

The extraordinary conditions existing during the latter part of the fiscal year and practically terminating at the writing of this report condensed such a vast amount of unanticipated work into its last few weeks, and also into the short period thereafter up to the time of cessation of hostilities, as naturally to make most prominent this particular portion of the year's history of the Bureau's labor. Happily terminated without miscarriage of any plans or failure in any case to meet the unprecedented requirements, the special features of this experience, as well as the lessons drawn therefrom, will be fittingly placed first herein, a reversal of the usual order of precedence, warranted by the unusual circumstances.

The first obvious effect of the emergency demands was to demonstrate in the briefest and most vigorous manner the necessities, facilities, and deficiencies of the various navy-yards and stations for handling a vast amount of urgent repairing and outfitting work on fleets of ships, both of regular naval vessels and those bought, chartered, or transferred, and transformed from merchant marine character into war ships.

While this has been a source of valuable information to the Bureau as to the requirements with which a sudden national emergency must be properly met, it has also illuminated the policy which has previously been advocated by the Bureau of placing the machinery establishments of the more southern yards and stations in a state of modern efficiency, and proved it to be a wise one.

A review of the work which had to be done during the year, and especially since the preparation for war began, sets forth most graphically the prudence of keeping all naval stations equipped with excellent tools and well stocked with nonperishable material and stores. Equally necessary, too, is the proper size and location of the buildings wherein this work must be done, for there can be no better proof of the vast increase in the cost of repair work (especially in emergencies which make it requisite to run the shops night and day) than has been shown in the first rush created by the demands of the fleet at Key West. Deficient shop lighting at night and lack of facilities for quickly reaching the various ships with working gangs, and bringing parts of machinery ashore, as well as the small available shop room in which to perform the work when so brought, combined to make dispatch almost impossible.

The work immediately necessary on the breaking out of the war was not so much extensive repairs to ships in commission as the fitting out of every available ship in ordinary so as to get some service out of each one in the possible crises. The old single-turret monitors were susceptible of fair use as harbor-defense vessels if they could quickly be made seaworthy, and one of the most notable engineering feats was in connection with this work. This consisted in the actual cutting out of the old and worn-out boilers of the monitors *Manhattan*, *Mahopac*, and *Canonicus*, at League Island, and erecting new boilers in their places without cutting the decks, and all within the space of thirty days. The boilers as cut up were passed out through the smoke-pipe opening and the new sections put down the same way, the results proving most satisfactory. This work was done by the Babcock & Wilcox Company, under contract, and this firm deserves great credit for the expedition with which the work was done.

It was well known that these vessels could not be used unless new boilers were fitted, and before war was declared the Bureau had ascertained that the firm mentioned was the only one which could do the

work in less than three months. Arrangements for beginning the work promptly had been made, and in less than five hours after the new boilers were authorized by the Department the work of building them was commenced. It is a source of satisfaction that the performance of these vessels with the new boilers exceeded that when the vessels were first built.

Anticipating damages in action to our various ships the Bureau made early contracts for the delivery at the various yards of quantities of boiler tubes, condenser tubes, and material for the manufacture of piping and fittings so as to be able to conduct extensive repairs without any delay, should they be rendered necessary. Had the war continued the benefit from this would have been most markedly shown.

By far the greatest amount of labor to the Bureau was brought through the necessity of fitting out the auxiliary navy, consisting of some one hundred and ten vessels added to the regular force by purchase, charter, or transfer. This comprised vessels of every imaginable style of craft, from tug and ferryboat to ocean steamers. Very few of these ships had evaporators and distillers, items most necessary to their continued service at sea; neither had they proper outfits of stores and tools, all of which needs had to be supplied with the greatest expedition. The task of overhauling and fitting up the machinery of these new ships, in addition to keeping the regular naval ships in order, was stupendous, especially as many of the purchased vessels required extensive alterations and additions. The necessity of much additional work on them developed after leaving the yards at which they were first fitted out, and it bore heavily upon the Bureau's resources at Key West to have these ships come there in numbers partly disabled. That this was due to faulty work at the Northern yards is not true, but rather, combined with some most unavoidable oversights there, the chief cause was the novelty of the machinery to the crews and the emergency of war which made it necessary to start them out before they could become familiar with it.

I found that while depending upon the energy and activity of Chief Engineer Little, of the naval station at Key West, for attending to the requirements of these cripples, it would be most advantageous to have an inspector of machinery afloat at that station. Chief Engineer J. W. Thomson was detailed for this duty, and by reason of great personal exertion, coupled with long and varied experience, succeeded in keeping the numerous ships which came there for repairs from more than temporary delay. Later the services of another retired chief engineer of great experience, Charles H. Manning, were utilized at Key West, and this officer did most valuable work there in handling the plant ashore and in advising the Bureau in regard to the expansion of the shops and the installation of tools.

It was a source of great gratification to report that the difficulties and obstructions incident to lack of complete preparation were, in a great degree, overcome in an almost inconceivably short time by reason of having the earnest and untiring cooperation of the officers selected to superintend the work, and also by having ample funds made immediately available, enabling the Bureau to authorize the direct purchase by telegraph of all needed material. In spite of this, however, all through the war inconvenience was experienced through the very slow and uncertain delivery of articles to Key West, the strenuous efforts of this Bureau and the Bureau of Supplies and Accounts failing to remedy the fault, so that much desired material failed to arrive in time to be of value. Stress is laid on this point here, to show the impor-

tance of having this least accessible naval station not only modernized in point of outfit, as has previously been urged (and which now is being rapidly done), but also in keeping it most amply stocked with such stores as are always in demand for machinery repair work and which do not become obsolete or useless with the lapse of a few years.

I do not think there can be a more opportune time than the present for submitting estimates and making liberal appropriations for correcting the faults of the various navy-yards and stations, both in the matter of buildings and machine tools, as, with the recent lessons fresh in mind, there is no uncertainty as to what is needed and no economy in delaying the work. In fact, the result is exactly opposite to economy where but a small part of the whole amount needed for remodeling a repair plant is allotted yearly and but slow and tedious progress made possible. In that case the plant is never consistently and wholly efficient, and by the time the last part of the original design is completed the first part has to be repaired. I would most earnestly recommend not only that the estimates herein made be granted without reduction, but also that equal consideration be attached to the recommendations of the bureau having charge of the buildings covering the changes and new structures touching this Bureau, that all may be pushed forward with dispatch and continuity.

I would ask earnest attention to my recommendation for the outfitting of the second repair ship, as noted elsewhere in this report. I have referred the matter of selecting one of the purchased ships for this service to the Department for consideration by the board on retention, and I feel sure that the record made by the *Vulcan* will convince the most skeptical that this floating shop was of inestimable value off Santiago, and that there is no more important feature to-day in the Navy than the maintenance of such a ship, well stocked, with every large fleet. The advantages of having these facilities for making every variety of repair follow the vessels of a fleet, instead of having to send ships back to a distant yard for work which requires but brief time when proper tools are available, are too obvious to need further comment.

One very important item of information was obtained from the long and severe services of the ships in tropical waters, and that was the urgent necessity of keeping a large fresh-water supply available for them. The evaporating plants, as usually found sufficient in ordinary cruising, proved inadequate to continuously meet the demands for fresh water there made so unusually heavy and due to conditions imposed by the hot climate. The high temperature of the sea water which is used for condensing the steam from the evaporators reduces the output of these plants to far below the normal, and the serious results from this were shown in salting up of boilers, dropping of furnace crown sheets, and, in some cases, the destruction of boiler tubes. As the very life and efficiency of a steamship lies in the ability to keep her boilers free from heavy scale, it became a matter of greatest moment to send to the fleet ships fitted especially for distilling water in great quantities; vessels that could follow the squadron and supply the daily deficiencies of fresh water wherever they might go. With this intention, the *Iris* was selected from the purchased ships and an evaporating and distilling plant of great capacity installed with all the speed possible under the circumstances. This plant is given in detail later in the report, but the necessary work was so extensive that, unfortunately, the ship was not finished in time to be of service during the hostilities.

While I have taken steps to add to the individual evaporating plant

of each ship as opportunity affords and where the needed additional space can be secured, I have also obtained a second distilling ship in which a duplicate plant to that on the *Iris* is being installed and is about completed at this writing. This ship, the *Rainbow*, will, with the *Iris*, make fitting pairs to the repair ships as attendants upon large fleets. At my suggestion the *Iris* has been detailed to accompany the *Ioica* and *Oregon* to the Pacific, where she will make a most valuable permanent addition to the station.

Barring the torpedo boats, which will be discussed later in this report, there was a remarkable absence of casualty in the machinery departments of the vessels of the fighting squadrons during the period of the war. Even in action, when forced-draft conditions were in operation and the excitable natures of the men most wrought upon by the surroundings, the reports show that the machinery not only worked well generally but that in no case was it greatly distressed. This is as fine a commentary upon the personnel as on the machinery.

It is greatly to be regretted that the torpedo boats can not show the same excellent records for their machinery, but it is a sad fact that nearly every one has had some accidents, and the machinery of some at the close of the war was in a condition which can only be described as horrible, where boilers were burnt, cylinder covers broken, pistons and valves stuck, and everything in bad shape. This condition of affairs seems attributable to two causes, the absence of trained engineering supervision and the use of the boats for duty to which they were not adapted.

Before the war the experiment (and it was understood to be an experiment) was attempted of running the torpedo boats with only one trained engineer officer for the whole flotilla, leaving the care of the machinery of the individual boats to young line officers, who had this as a part of their multifarious duties. It is not their fault that they are not trained engineers, and undoubtedly they were faithful in their efforts to perform their duties, but they had not been through the preliminary training which will come with the passage of the personnel bill, and a man without previous training does not become at once a skilled engineer by assuming charge of machinery.

This experience with the torpedo boat is, indeed, an excellent illustration of the benefits to be anticipated from the passage of the personnel bill. Only a very few officers can be carried, but when everyone is an engineer by education and training, there is an assurance that these machines will have trained supervision and be kept in good order.

As to the second cause, it did not require this experience to prove that this type of vessel can not be safely used for dispatch-boat duty and to act as tenders on blockading ships far from base of supplies or facilities for efficient repair. Primarily, they are intended for high-speed spurts where success or failure in the use of their special weapon shall be quickly demonstrated. For this they are especially built and for this they should be solely kept.

The immense amount of detail work done in the designing room of the Bureau is noted under a separate heading, and it is difficult to comprehensively represent to any but professional draftsmen the full extent of the task accomplished here during the year and the immense amount of work imposed upon the officers detailed to carry out this portion of the Bureau's labors. In this connection I would also commend the faithful and willing performance of the increased work which came upon them by the draughtsmen and clerks of the Bureau.

Among the special items of navy-yard work on vessels during the year the following are noted separately from the general list given under the yard headings:

The machinery of tugboat No. 6 has been practically completed at the Norfolk Navy-Yard, and since the ending of the fiscal year has been shipped to the New York yard for installation, the hull of this tug having been constructed there. This tug will have the first cast-steel crank shaft of any size in the Navy. This successful casting was made at the works of the American Steel Casting Company, Thurlow, Pa.

Machinery for tug No. 7 is rapidly approaching completion at the Mare Island Navy-Yard.

The machinery for the *Chicago* at the New York Navy-Yard was completed and installed, and that ship is about ready for initial trial.

The new boilers for the *Atlanta* were completed and installed at the New York yard, including the four Babcock & Wilcox water tube boilers built by contract, which are fitted with economizers. The modernized machinery of this vessel is rapidly being put in place, although involving probably more work, in point of time and tediousness, than would have been the case had entirely new machinery been built.

New boilers for the *Dolphin* were finished at the New York yard and installed, and the evaporating plant of this vessel was improved.

Fair progress was made on the machinery of the *Hartford*, but the failure to produce a sound cast-steel crank shaft, after repeated efforts on the part of the contractor for that work, greatly delayed the engine construction.

The *Fortune's* machinery still awaits the completion of the hull, as noted in my last report.

Alterations and changes in the evaporating plant of the *Helena* and *Marblehead*, and fitting of new corrugated furnaces in the boilers of the *Puritan*, was done at New York.

The following new vessels were prepared for commission after being turned over by the contractors: *Helena*, *Nashville*, *Annapolis*, *Marietta*, *Newport*, *Wheeling*, *Vicksburg*, *Foote*, *Rodgers*, *Winslow*, *Dupont*, *Morris*, *Talbot*, *Gwin*, and *McKee*.

NAVY-YARD, BOSTON, MASS.

While the situation of this yard is farther from the scenes of the recent war than most of the others, its advantages as a repair station were well illustrated. Thoroughly protected from attack and practically on the seacoast, it affords opportunities for work in time of war superior in point of safety to any other yard equally accessible to our ships. It was here that the *Vulcan* was fitted out, and it is the policy of the Bureau promptly to utilize the balance of the available appropriation granted last year in modernizing the machinery plant. This yard should be thoroughly equipped and obsolete machinery supplanted by new.

The points of excellence of this station should be more fully recognized and a revival of extensive marine work brought about there. The skilled mechanics of New England have few equals and no superiors, and the Boston yard would never be at a loss for efficient workmen to meet all the demands that would be made on it through greatest emergency.

An additional appropriation will be asked for with which to continue the expansion of the machinery plant as soon as conditions there will warrant it.

Repairs during the fiscal year have here been made to the following ships: *Bancroft, Calumet, Ircana, Katahdin, Lancaster, Lebanon, Lehigh, Machias, Newport, Seminole, Southery, Vesuvius, Vulcan, Wyandotte, Yantic.*

Expenditures for work upon naval vessels.....	\$22, 132. 36
Expenditures other than for naval vessels:	
Office expenses.....	270. 64
Superintendence, care, and repair of shop machinery and tools.....	11, 311. 26
Running, firing, and repairing yard engines and boilers.....	444. 26
Improvement of plant, new tools, etc.....	1, 286. 76
Care and repair of yard steam launches.....	46. 06
Labor and material for other departments.....	3, 458. 43
Holidays.....	405. 12
Total.....	39, 354. 89

NAVY-YARD, PORTSMOUTH. N. H.

This yard has continued the work of making steam-cutter machinery as heretofore. It has not the natural advantages of some of the other yards for handling the repair work of the larger ships of the Navy, but it is a very valuable station in other ways. During the year repairs were made here to the *Alliance, Essex, Newport, Frolic, Piscataqua, and Vicksburg.* It also came in for a share of the emergency work, but this was principally after the end of June.

Expenditures for work upon naval vessels.....	\$20, 408. 80
Expenditures in making steam-launch machinery for issue to naval vessels.....	39, 215. 34
Expenditures other than for naval vessels:	
Civil establishment.....	1, 200. 00
Office expenses.....	600. 00
Superintendence, care, and repair of shop machinery and tools; running, firing, and repairing yard engines and boilers.....	20, 883. 86
Care and repair of yard steam launches.....	3, 218. 40
Labor and material for other departments.....	483. 32
Miscellaneous.....	1, 209. 42
Total.....	87, 219. 14

NAVY-YARD, NEW YORK.

This navy-yard has handled more repairs to and outfitting of naval vessels than any other yard during the year, and has maintained its position as the foremost repair station in the United States, with Norfolk now as a close second and rapidly equalizing it in facilities for superior engineering work. This yard, by reason of its proximity to the metropolis, continues to attract the greater number of vessels requiring general overhauling. With unlimited resources in the form of skilled labor and in close touch with the makers of material for all kinds of repairs the natural advantages are not waning, and the need of keeping the machinery plant in a high state of efficiency was never more pressing than now.

To the immediate erection of the designed extension of shop buildings of this department of the yard, by which the quadrangle partly formed by the present buildings will be completed, I most earnestly ask attention. This department is hampered in its work to such a degree by overcrowding, as to make the simultaneous efficient operation of the tools within it impossible. Aside from the needs of the machine shops and the lack of proper erecting shops, the copper shop is still merely a portion of the foundry, robbing the latter of sorely needed space, yet obtaining by this robbery but scant accommodation for its own neces-

sary and constantly growing work. Equally clear is the necessity to complete the extension for offices and drafting room, plans for which are also included in the recommendations of the Bureau of Yards and Docks. The large number of clerks are jostling each other all in one room, preventing really excellent results in point of speed, while the drafting room is dark, small, and as badly situated for such work as could well be devised.

It is mortifying to me to note the additional difficulties and obstructions to performance of duty imposed by these faulty conditions upon the chief engineer of this yard, especially when the demands upon his physical and mental forces have been so severely exacting as during this last summer, and when his self-sacrificing devotion to the work has been so conspicuous. The desired remedy is in such direct line with increased economy in the operations of this department, and the needs for more room so earnestly demanded by the work waiting to be done as well as by the evident unhealthful and scarcely decent crowding of the clerical force within the present quarters, that I feel this matter should be urged with all speed to a fitting correction, and that the situation may be promptly relieved of its embarrassing features. Much new machinery to replace less modern and therefore less economical elements of the shops of this yard continue to be needed, and the estimate of \$50,000 is submitted this year for that purpose. The important work on the *Atlanta* and *Chicago* (new machinery), as noted elsewhere, has been continuously carried on this year, and since the beginning of the war the resources of the shops have been taxed to their utmost limit by the immense amount of work concentrated there.

The following 86 vessels have been repaired here during the fiscal year, 73 of which were in hand during its last three months: *Aberdeen*, *Aileen*, *Alexander*, *Algonquin*, *Alice*, *Alliance*, *Amphitrite*, *Annapolis*, *Atlanta*, *Badger*, *Bancroft*, *Brooklyn*, *Cæsar*, *Celtic King*, *Cincinnati*, *Columbia*, *Chicago*, *Detroit*, *Dolphin*, *Dupont*, *Eagle*, *Elfrida*, *Enquirer*, *Ericsson*, *Essex*, *Fern*, *Foot*, *Free Lance*, *Gloucester*, *Hannibal*, *Harlech*, *Hawk*, *Helena*, *Hist*, *Hornet*, *Huntress*, *Indiana*, *Iowa*, *Kanawha*, *Leontidas*, *Maine*, *Marblehead*, *Massachusetts*, *Mayflower*, *Montgomery*, *Morris*, *Nahant*, *Narkeeta*, *New Orleans*, *Newport*, *New York*, *Nezinscott*, *Niagara*, *Nina*, *Osceola*, *Paicnee*, *Pompey*, *Porter*, *Prairie*, *Puritan*, *Restless*, *Rodgers*, *San Francisco*, *Saturn*, *Sioux*, *Siren*, *Solace*, *Scindia*, *Scipio*, *Scorpion*, *Sterling*, *Stiletto*, *Stranger*, *Sylvia*, *Tecumseh*, *Terror*, *Texas*, *Therps*, *Topeka*, *Traffic*, *Uncas*, *Vermont*, *Viking*, *Wasp*, *Wompatuck*, *Yankee*.

Expenditures for work upon naval vessels.....	\$622,361.28
Expenditures other than for naval vessels:	
Civil establishment.....	2,957.76
Office expenses.....	1,430.96
Extra clerical force.....	14,965.70
Care and handling of stores.....	5,149.00
Superintendence, care, and repair of shop machinery and tools.....	40,340.00
Running, firing, and repairing yard engines and boilers.....	1,808.83
Improvement of plant, new tools, etc.....	5,731.56
Repairs and maintenance of floating derrick.....	2,174.08
Care and repair of yard steam launches.....	2,218.18
Making evaporators and distillers for issue.....	7,913.30
Labor and material for other departments.....	13,145.97
Experimental and test purposes.....	2,838.14
Making stores for issue.....	8,184.79
Breaking up old material.....	1,436.07
Shipments.....	5,825.22
Holidays.....	6,302.00
Miscellaneous.....	85.28
Total.....	\$646,095.08

NAVAL STATION, NEW LONDON, CONN.

This station is practically closed as a repair station. No work was done on naval vessels except care and repair of steam launches, costing in all \$1,110.11.

NAVAL STATION, NEWPORT, R. I.

Work in steam engineering has been confined to the supply of necessary stores and material and making repairs to steam-cutter machinery and boilers. The outfit of tools here is only such as is warranted by the light character of the work sent.

Expenditures for work upon naval vessels.....	\$12. 51
Expenditures other than for naval vessels:	
Superintendence, care, and repair of shop machinery and tools.....	241. 30
Running, firing, and repairing yard engines and boilers	649. 11
Care and repair of yard steam launches.....	622. 78
Total	1, 525. 70

NAVY-YARD, WASHINGTON, D. C.

Naturally out of the reach of the larger vessels of the Navy, and indeed convenient to none, the steam engineering work of this yard has mainly consisted in the manufacture of parts and fittings of special machinery for all the torpedo boats and for the new ships building. Repairs of minor character were made to the *Helena* and *Triton*.

Expenditures were as follows:

Expenditures for work upon naval vessels.....	\$22, 167. 87
Office expenses.....	56. 97
Superintendence, care, and repair of shop machinery and tools.....	2, 247. 00
Care and repair of yard steam launches	183. 40
Holidays	84. 51
Blue-print apparatus for Bureau.....	951. 13
Total	25, 690. 88

NAVY-YARD, LEAGUE ISLAND.

This yard has become the accepted and ideal place for laying up in reserve such of our ships as are too expensive to keep in full commission in times of peace or those which are not fitted for cruising. The natural fresh-water basins in the back channel enable proper mooring of very large ships where they are properly protected. The reserve navy promises to be large, and, as long as we have a Navy at all, it is the very wisest policy to keep all these vessels in excellent condition. In spite of popular impression to the contrary, continual deterioration goes on even under these conditions, and it is here that the "stitch in time" can be taken, so as wholly to avoid extensive preparation or overhauling when the ships are needed. The three old monitors were fitted at this yard with new boilers, as stated on a previous page, and while there is a good outfit for the usual machinery repair work, it will be necessary to install boiler-making appliances to round out the plant and make it comparatively complete. I submit herewith an estimate of \$15,000 for this and kindred work.

Attention is asked to the completion of the buildings of this department as already planned.

During the year the following ships were repaired or overhauled: *Lehigh, Mahopac, Manhattan, Jason, Peoria, Vixen, Dorothea, Justin, Princeton, Fish Hawk, Massasoit, Supply, Leyden, Richmond, Miantonomoh, Katahdin, Columbia, Minneapolis, Iowa, Montauk, Nahant, Canonicus, Catskill.*

Expenditures for work upon naval vessels	\$105,415.82
Expenditures other than for naval vessels:	
Civil establishment	1,200.00
Extra clerical force	1,723.12
Superintendence, care, and repair of shop machinery and tools.....	8,327.80
Runing, firing, and repairing yard engines and boilers.....	807.22
Improvement of plant, new tools, etc.....	3,528.80
Care and repair of yard steam launches.....	930.82
Labor and material for other departments	751.56
Holidays.....	986.06
Total	123,671.22

NAVY-YARD, NORFOLK, VA.

This yard stands next to New York in importance as a repair station, and in many respects it has natural advantages superior to the latter, although not situated as close to the great manufacturing interests. Under the management of the present chief engineer, advances have been continued in the direction of bringing the shops and the tools up to the highest state of efficiency, until now we have no better equipped shops anywhere, nor ones where engineering work can be performed with greater dispatch or excellence. The expenditure of the last-granted appropriation for new tools, etc., for this yard is being wisely directed, and I herewith submit an estimate for an additional \$15,000 with which to pursue this remodeling policy and further increase the efficiency and economy of this plant, that it may keep pace with the advances of the mechanical world outside and be prepared for any emergency. No money expended by the Government gives such sure and satisfactory returns as that paid for the improved machine tools which increase quantity and quality of output together. The great saving due to these is seldom traced to its proper source by the Government, but it is realized fully by all manufacturing concerns and exists as truly in Government work.

During the year some 72 vessels were repaired or fitted out at this yard: *Abarenda, Alice, Amphitrite, Annapolis, Apache, Armeria, Bancroft, Brooklyn, Cassius, Castine, Cincinnati, Cushing, Dixie, Dolphin, Dupont, Ericsson, Fern, Foote, Fortune, Franklin, Hamilton, Hudson, Indiana, Iowa, Iris, Justin, Katahdin, Lebanon, Maine, Manning, Massachusetts, McKee, Merrimac, Miami, Minneapolis, Mohawk, Monongahela, Montgomery, Morrill, Nashville, Newark, New York, Niagara, Oneida, Osceola, Porter, Puritan, Rainbow, Raleigh, Rodgers, Samoset, Saturn, Scorpion, Sioux, Solace, Southery, Standish, Sterling, Suwanee, Terror, Texas, Triton, Uncas, Vesuvius, Vicksburg, Wompatuck, Wilmington, Windom, Winslow, Woodbury, Yankton, Yosemite*, of which 46 were repaired during the last ninety days of the fiscal year.

The proximity of the yard to the naval rendezvous at Hampton Roads makes it naturally the great repair station of the South, and it is within such easy communication with New York as to often permit the two yards to work conjointly on extensive repairs to a single ship, Norfolk making and shipping special parts with economy and dispatch.

Expenditures of work upon naval vessels	\$246, 479. 25
Expenditure for work upon launch machinery for issue to naval vessels	15, 608. 28
Expenditures other than for naval vessels:	
Civil establishment	1, 881. 88
Office expenses	555. 51
Extra clerical force	5, 855. 74
Care and handling of stores	5, 567. 91
Superintendence, care, and repair of shop machinery and tools	50, 990. 28
Running, firing, and repairing yard engines and boilers	400, 35
Improvement of plant, new tools, etc	3, 396. 74
Care and repair of yard steam launches	4, 289. 05
Making evaporators and distillers for issue	353. 41
Experimental and test purposes	323. 44
Making stores for issue	607. 70
Breaking up old material	921. 74
Holidays	3, 875. 37
Miscellaneous	553. 39
Total	341, 660. 04

NAVAL STATION, PORT ROYAL, S. C.

This is another station which lacks machine shops for the installation of the tools which will make it a most valuable repair yard in times of emergency; or, indeed, at all times. It is an important link in the coast line chain of stations which can be made capable of doing all kinds of light and heavy repairs, and where large ships may be safely docked. Appropriation has been made for necessary tools and appliances for the steam engineering department, and these will be purchased as soon as the buildings are erected and prepared for them.

Expenditure for work upon naval vessels and steam launches, \$10,295.81.

NAVY-YARD, PENSACOLA, FLA.

No work of great importance has been done at this yard during the year, although since the outbreak of the war repairs were made to the *Choctaw*, *Potomac*, *Powhatan*, and *Tacoma*.

Expenditure for work upon naval vessels	\$2, 271. 15
Expenditures other than for naval vessels:	
Civil establishment	1, 000. 00
Office expenses	27. 73
Care and handling of stores	577. 40
Superintendence, care, and repairs of shop machinery and tools	3, 724. 31
Running, firing, and repairing yard engines and boilers	1, 088. 71
Care and repair of yard steam launches	2, 262. 13
Total	10, 951. 43

NAVAL STATION, KEY WEST, FLA.

The situation of this station has always been regarded as most important and the late emergency has shown this to be the case and impressed everyone with the immense advantage that would have been gained by having earlier established a modern repair plant there. That so very much work was successfully accomplished, through the almost superhuman efforts of those to whom the task was allotted, is only an index of what could have been performed with a good outfit of machine tools and proper shops. If these had been located a year ago our ships could have been kept absolutely in first-class condition indefinitely, without any necessity of sending them north until the need of their services was over. It is not desirable in time of peace to keep this station in full

operation, climatic reasons being against the economy and wisdom of this; but the work, now well begun, of making the machine repair plant modern and excellent will be pushed as fast as possible. The new machine shop is in an advanced state of erection, and the new tools are contracted for or in process of being so placed with contractors as to be available as soon as wanted.

During the year repairs have been made to 64 vessels and during the first month of the present fiscal year to 37 vessels.

In addition to the shops there is urgently needed a wharf built out to deep water from the machine shop front from which repair parties can be readily sent in boats to the ships needing them. This was shown to be absolutely requisite, as the lack of this facility caused serious delays and greatly added to the expense in the work that was done by the yard men on the ships.

The following is a list of the ships repaired here during the year: *Mangrove, Leyden, Puritan, Dupont, Foote, Winslow, Castine, Samoset, Detroit, Algonquin, Helena, Ericsson, Newport, Mayflower, Dolphin, Cushing, Porter, Hornet, Amphitrite, Tecumseh, Cincinnati, Wasp, Haick, Merrimac, Saturn, Sioux, Rodgers, Uncas, Machias, Suwanee, Osceola, Miantonomoh, Nashville, Terror, Vesuvius, Annapolis, Wompatuck, Nezinscott, Oregon, Bancroft, Wilmington, Scorpion, Indiana, Minneapolis, Bache, Oneida, Eagle, Marietta, Montgomery, Hamilton, New York, Resolute, Pompey, Vicksburg, Lancaster, Blake, Passaic, Leonidas, Niagara, New Orleans, Woodbury, Windom, and Yankee.*

Expenditures for work upon naval vessels	\$15, 342. 42
Expenditures for work other than for naval vessels:	
Office expenses.....	855. 12
Care and handling of stores.....	333. 44
Superintendence, care, and repair of shop machinery and tools.....	4, 654. 62
Work for other departments.....	384. 25
Running, firing, and repairing yard engines and boilers.....	476. 00
Improvement of plant, new tools, etc.....	8, 336. 66
Care and repair of yard steam launches	982. 00
Miscellaneous.....	160. 88
Total	31, 525. 39

NAVY-YARD, MARE ISLAND, CAL.

I would ask special attention to the urgency of the erection of new shops for this Bureau in this yard at a point close to the site of the proposed new dry dock. If the damage to the old buildings of this Department by the earthquake of March last will have the effect of expediting the change in their location, it may be viewed as a providence. At no other yard in the country is the disposition of the repair shops relative to the location of the dry docks and wharves so absolutely unsuited for speedy work or work with any approach to economy as here. It is patent to the most casual observer, and had our late war emergency concentrated the fleets on that coast instead of on this the lack of proper facilities might have been disastrous to the country. The plans for the location of the buildings are to be submitted by the proper Bureau, and I strongly urge the grant of all estimates therefor.

For some years, no doubt, the difference in cost of most material for mechanical construction will be an addition to the expense of all repair work on the Pacific coast, and the only way to offset this is to make the mechanical appliances of absolutely the most effective and modern

type and then locate these where the least time is consumed in making the trip from shops to ship. New tools will be installed as soon as the new buildings are erected, and the Bureau will endeavor to keep this department up to date in every point.

Expenditures for work upon naval vessels	\$242, 653. 79
Expenditures for work upon steam-launch machinery for issue to naval vessels.....	18, 355. 54
Expenditures, other than for naval vessels:	
Civil establishment	1, 400. 00
Office expenses, writers, drafting, etc	6, 628. 03
Care and handling of stores.....	5, 740. 92
Superintendence, care, and repair of shop machinery and tools	51, 135. 27
Running, firing, and repairing yard engines and boilers	9, 258. 51
Improvement of plant, new tools, etc	28, 448. 73
Care and repair of yard steam launches	588. 47
Labor and material for other departments.....	3, 125. 01
Experimental and test purposes	184. 23
Making stores for issue	19, 689. 28
Breaking up old material	553. 12
Shipments.....	860. 74
Holidays	4, 893. 59
Total	393, 515. 23

NAVAL STATION, BREMERTON, WASH.

I am only awaiting the erection of the necessary buildings at this station before sending out machine tools that shall place the yard in condition to handle every kind of machinery repair. The fine dry dock, with its efficient pumping plant, forms a fitting nucleus for a modern repair establishment which, in importance, will be second to none on that coast. Indeed, it will be the one great docking point, and every effort should be made to hasten its completion. One great advantage exists in the fact that it is entirely new, and therefore there are no old or badly located buildings as objectionable features. All the new buildings should be of the most substantial character and located with a view to the greatest economy in work. The plans are well made in this respect.

I submit herewith an estimate for an additional \$25,000 in order to complete the needed outfit promptly and not necessitate dependence for assistance on outside establishments, as stated in my last report, when urging the speedy advancement of this important work.

The work done at this station has been the care and repair of the *Nipsic's* steam-cutter machinery and supplying necessary material and stores, amounting to \$1,872.43.

PRESENT CONDITION OF THE MACHINERY OF NAVAL VESSELS.

The following statement shows the condition of machinery according to the latest reports, together with certain useful data of our new ships, vessels being in commission unless otherwise noted. Many of the vessels which have been engaged in the operations of the war and continuously under steam for long periods may be found, when opportunity is offered for careful inspection of the machinery, to be in need of repairs, the necessity for which is not apparent now:

Completed vessels authorized

Name of vessel.	Type of vessel.	Type of engines.	Cylinder diameters in inches.			Stroke In.	Number and types of boilers.	Total grate surface.	Total heating surface.
			H. P.	I. P.	I. P.				
Amphitrite	Double-turret monitor	Compound inclined, 2 screws.	33	...	48	42	6 single-ended, cylindrical.	89. ft. 378	8, 800
Annapolis	Composite gunboat.	Vertical, triple expansion single screw.	15	24½	40	28	2 Babcock and Wilcox.	98	2, 020
Atlanta	Protected cruiser, second rate.	Horizontal, triple expansion single screw.	34	50½	74½	42	4 Babcock and Wilcox, 2 cylindrical.	303	10, 624
Baltimore	do	Horizontal, triple expansion, 2 screws.	42	60	94	42	4 double-ended cylindrical.	656	16, 674
Bancroft	Gunboat.	Vertical, triple expansion, 2 screws.	13½	21	31	20	2 cylindrical straight-way, 5 tubular.	87.75	2, 096
Bennington	do	Horizontal, triple expansion, 2 screws.	22	31	50	30	4 cylindrical straight-way, 5 tubular.	220	8, 210
Boston	Protected cruiser, second rate.	Horizontal, 3-cylinder, compound 1 screw.	54	...	67½	42	8 single-ended cylindrical.	400	10, 146
Brooklyn	Armored cruiser, first rate.	4 vertical, triple expansion, 2 screws.	32	47	72	42	5 double-ended and 2 single-ended cylindrical.	1, 016.2	33, 432
Castine	Gunboat.	Vertical, triple expansion, 2 screws.	15½	22½	36	24	2 marine locomotive.	120	4, 600
Charleston	Protected cruiser.	Inclined (7° 21') compound, 2 screws.	44½	...	85½	36	7 single-ended cylindrical.	426.2	15, 577
Chicago	do	Horizontal, triple expansion, 2 screws.	33½	50½	76	40	6 Babcock and Wilcox and 4 single-ended cylindrical.	633.32	22, 362.00
Cincinnati	Protected cruiser.	Vertical, triple expansion, 2 screws.	36	53	65½	43	4 double-ended and 2 single-ended cylindrical.	607	20, 167
Columbia	do	Vertical, triple expansion, 3 screws.	42	59	92	42	8 double-ended and 2 single-ended cylindrical.	1, 408	45, 20.70
Concord	Gunboat.	Horizontal, triple expansion, 2 screws.	22	31	50	30	4 cylindrical straight-way, 5 tubular.	220	8, 210
Cushing	Torpedo boat.	Vertical, quadruple expansion 2 screws.	11½	16	22½	15	2 Thornycroft, tubular.	76.6	4, 750
Detroit	Unprotected cruiser.	Vertical triple expansion, 2 screws.	26.5	39	63	26	3 double-ended and 2 single-ended cylindrical.	367.246	10, 974.00
Dolphin	Dispatch boat.	Vertical, compound, 2 screws.	42	...	78	48	2 double-ended and 2 single-ended cylindrical.	200.64	8, 162.00

a Authorized previous to 1883, but subsequently remodeled.

b Two low-pressure cylinders.

c Two I. P. cylinders.

subsequent to March 2, 1883.

Ratio of heating to grate surface.	Date of contract trial.	Contract trial speed.	Total maximum indicated horsepower.	Total bunker capacity.	Coal endurance at 10 knots per hour.	Total weight of machinery.	Date of first commission.	Date of latest recommission.	Present condition of machinery.
		<i>Knots.</i>		<i>Tons.</i>	<i>Knots.</i>	<i>Tons.</i>			
21.36		12	1,600	284	1,300		Apr. 23, 1885		Fair.
24.94	Apr. 22, 1897	12.172	1,227.30	222	2,325	100.62	July 30, 1897		Good.
25.72							July 19, 1898	Out of commission.	Being re-modeled at navy yard, New York. Engines good, boilers fair.
25.62	Nov. 15, 1899	130.000	10,064.42	1,143	7,212	827.51	Jan. 7, 1900	Oct. 12, 1897	Engines good, boilers fair.
26.61	Jan. 26, 1893	14.374	1,212.00	130	3,100	104.72	Mar. 3, 1893		Do.
27.32	Apr. 2, 1891	117.5	2,302.25	301	4,302	282.65	June 20, 1891		Good.
28.26	Aug. 2-3, '89	115.58	40,925.9	480	3,300	698.02	May 2, 1897	Nov. 18, 1895	Engines good; boilers fair.
22.60	Aug. 27, 1890	21.9117	12,709.62	1,400	5,110	1,333.65	Dec. 1, 1896		Good.
21.25	Sept. 15, 1893	116.023	2,100.25	220	5,000	144.84	Oct. 22, 1894		Engines good, boilers fair.
25.70	Aug. 22, 1896	118.205	6,000.10	730	4,250	591.90	Dec. 26, 1890	May 5, 1898	Good.
24.71		118	40,900				Apr. 17, 1899	Out of commission.	Being re-modeled at navy yard, New York
21.22	(c)	120	10,000 (d)	480	3,000	700.35	June 16, 1894		Good.
21.007	Nov. 18, 1893	123.80	18,500.343	1,600	7,200	1,705.80	Apr. 23, 1894		Engines good, boilers fair.
27.21	Jan. 13, 1891	114.8	2,404.820	300	4,142	284.50	Feb. 14, 1891	May 22, 1897	Good.
22	March, 1890	22.5	1,720	20	1,002	54.5	Jan. 11, 1892		Do.
20.6	Apr. 17, 1893	12.71	5,227.14	352	3,280	400.31	July 20, 1893		Engines good; boilers fair.
21.26	May 20, 1895	114.0	2,255	265	3,120	110	Dec. 8, 1885	Mar. 24, 1896	Good.

Completed vessels authorized

Name of vessel.	Type of vessel.	Type of engines.	Cylinder diameters in inches.			Stroke.	Number and types of boilers.	Total grate surface.	Total heating surface.
			H.P.	I.P.	L.P.				
Dupont	Torpedo boat.	4 cylinders, vertical triple expansion, 2 screws.	16	22½	{a25 a25}	16½	{3 modified Normand, tubulous.	Sq. ft. 160.6	Sq. ft. 8,287.7
Ericsson .....	.....do	Vertical, quadruple expansion, 2 screws.	11.5	{b16 b21½}	30	16	{2 Thornycroft.	85	4,696
Foote .....	.....do	Vertical, 4 cylinders, triple expansion, 2 screws.	12	19½	{a22 a22}	16	{2 Mosher, tubulous.	96	5,260
Gwin .....	.....do	Vertical, triple expansion, single screw.	12½	18	25	13.5	1 Normand, tubulous.	38	1,870
Helena	Gunboat.....	Vertical, triple expansion, 2 screws.	14.5	22	33.75	18	6 single-ended cylindrical.	126	4,800
Indiana.....	Battle ship, first class.	.....do	34½	48	75	42	4 double-ended and 2 single-ended cylindrical.	616	19,194.64
Iowa .....	.....do .....	.....do	39	55	85	48	3 double-ended and 2 single-ended cylindrical.	756	24,062.2
Katahdin....	Harbor-defense ram.	Horizontal, triple expansion, 2 screws.	25	36	56	36	2 double-ended and 1 single-ended cylindrical.	354	12,150
Machias	Gunboat.....	Vertical, triple expansion, 2 screws.	15½	22½	35	24	2 marine locomotive.	120	4,500
Manly	Torpedo boat.	Single screw.....	.....	.....	.....	.....	.....	.....	.....
Marblehead .	Unprotected cruiser.	Vertical, triple expansion, 2 screws.	26.5	39	63	26	3 double-ended and 2 single-ended cylindrical.	358.17	11,057.98
Marietta.....	Composite gunboat.	.....do	12	18	28	18	2 Babcock and Wilcox tubulous.	98	3,620
Massachusetts.	Battle ship, first class.	.....do	34½	48	75	42	4 double-ended and 2 single-ended cylindrical.	616	19,194.64
Mayflower...	Torpedo gunboat.	4 cylinders, vertical, triple expansion, 2 screws.	22½	38	{a40 a40}	27	2 single-ended cylindrical and 1 vertical.	.....	.....
McKee	Torpedo boat.	Vertical, triple expansion, 1 screw.	12	19½	{a22 a22}	16	2 Thornycroft.	40	2,120
Miantonomoh.c	Double-turret monitor.	Inclined, compound, 2 screws.	32	.....	48	42	6 single-ended cylindrical.	360	8,781.12
Minneapolis .	Protected cruiser.	Vertical, triple expansion, 3 screws.	42	59	92	42	8 double-ended and 2 single-ended cylindrical.	1,520.2	50,167.2

a Two L. P. cylinders.
b Two I. P. cylinders.

c Authorized previous to 1883, but subsequently remodelled.

Subsequent to March 2, 1883—Continued.

Ratio of loading to grate surface.	Date of con- tract trial.	Con- tract trial speed.	Total maximum indicated horse- power.	Total bunker ca- pacity.	Coal endurance at 10 knots per hour.	Total weight of ma- chinery.	Date of first commission.	Date of latest recommen- dation.	Present condition of machinery
51.60		Knots.		Tons.	Knots.	Tons.			
				43	41.347	5 62.75	Sept. 23, 1897		Good
55.27	Oct. 27, 1894	524	51,800	40	3984	55	Feb. 18, 1897		Do.
55.29	June 25, 1897	24.534	22,000	43	41,235	50.93	Aug. 7, 1897		Do.
69.21	Mar. 3, 1896	20.88	3850			15.60	Apr. 4, 1896		Do.
38.1	Mar. 29, 1897	15.497	1,003.18	274	2,300	185.18	July 8, 1897		Do.
21.16	Oct. 18, 1895	15.547	9,739.49	1,530	3,720	1,059.03	Nov. 20, 1895		Engines good, boil- ers fair.
26.96	Apr. 7, 1897	17.087	12,104.80	1,600	4,000	1,057.43	June 16, 1897		Good.
21.5	Oct. 31, 1896	16.114	8,067.77	303	1,000	413.34	Feb. 20, 1896	Mar. 10, 1898	Do.
24.25	June 10, 1893	15.464	1,571.41	200	4,500	143.70	July 20, 1893		Fair.
		17							Built by Yarrow, England.
22.52	Dec. 7, 1893	13.44	5,450.65	230	2,900	429.90	Apr. 2, 1894		Good.
17	May 26, 1897	12.02	1,054.08	246	5,470	110.13	Sept. 1, 1897		Do.
22.25	Apr. 25, 1896	16.2079	10,402.66	1,560	4,500	1,051.92	June 10, 1896		Do.
		16.75	4,800				Mar. 24, 1898		Formerly yacht May- flower. Good
23.46	May 2, 1896	19.62	7850				May 16, 1896		Good.
23.8		10	1,426	240	1,200	509.77	Oct. 27, 1891	Mar. 10, 1898	Engines fair, boil- ers poor, ext. ma- chinery worn.
22.66	July 14, 1894	21.073	20,862.30	1,520	6,300	1,071.62	Dec. 13, 1894		Good.

a At 14.5 knots.
b Estimated.

c At 14.35 knots.
d Designed.

e At 14.4 knots.
f Two L. P. cylinders.

Completed vessels authorized

Name of vessel.	Type of vessel.	Type of engines.	Cylinder diameters in inches ^a			Stroke. In.	Number and types of boilers.	Total grate surface.	Total heating surface.
			H.P.	L.P.	L.P.				
Monadnock	Double-turret monitor	Horizontal, triple expansion, 3 screws.	19½	30½	52½	30	4 single-ended cylindrical.	Sq. ft. 200	Sq. ft. 8,241.70
Monterey	Barbette-turret monitor.	Vertical, triple expansion, 2 screws.	27	41	64	30	2 single-ended cylindrical and 4 "Ward" tubulars.	383.34	14,785
Montgomery	Unprotected cruiser.	do	26½	30	63	26	3 double-ended and 2 single-ended cylindrical.	363.43	10,978.08
Morris	Torpedo boat	do	12½	18	25	13½	2 modified Normand tubulars.	80.00	4,004
Nashville	Gunboat	Vertical, quadruple expansion, 2 screws.	11	(a17) (a24)	34	18	4 Yarrow tubulars and 2 single-ended cylindrical.	142	5,350
Newark	Protected cruiser.	Horizontal, triple expansion, 2 screws.	34	52	76	40	4 double-ended and 2 single-ended cylindrical.	561.4	17,291.8
New Orleans ^b	do	Vertical, triple expansion, 2 screws.	31	46	70	30	4 double-ended cylindrical (also 1 small donkey boiler).	480	
Newport	Composite gunboat.	Vertical, triple expansion, 1 screw.	15½	23½	36	30	2 single-ended cylindrical.	78	2,524
New York	Armored cruiser, first rate.	4 vertical, triple expansion, 2 screws.	32	47	72	42	6 double-ended and 2 single-ended cylindrical.	1,051.96	32,957.80
Olympia	Protected cruiser.	Vertical, triple expansion, 2 screws.	42	59	92	42	4 double-ended and 2 single-ended cylindrical.	824	28,298.64
Oregon	Battle ship, first class.	do	34½	48	75	42	do	616	18,754
Petrel	Gunboat	Horizontal, compound, 1 screw	25	...	46	33	2 cylindrical straightway	93.2	2,796
Philadelphia	Protected cruiser.	Horizontal, triple expansion, 2 screws.	38	54	86	40	4 double-ended and 2 single-ended cylindrical.	645.4	20,968.78
Porter	Torpedo boat.	4-cylinder, vertical triple expansion, 2 screws	16	22½	(a25) (a25)	16½	3 modified Normand tubulars.	160.6	8,287.7
Princeton	Composite gunboat.	Vertical, triple expansion, 1 screw.	15½	23½	36	30	2 single-ended cylindrical.	78	2,524.04
Puritan	Double-turret monitor.	Horizontal, compound, 2 screws.	50	...	85	42	8 single-ended cylindrical	560	12,461
Raleigh	Protected cruiser.	Vertical, triple expansion, 2 screws.	36	53	(a57) (a57)	33	4 double-ended and 2 single-ended cylindrical.	607	20,167

^aTwo L. P. cylinders.^bPurchased in England; formerly Amazonas.^cMain boilers.

subsequent to March 2, 1883—Continued.

Ratio of heating to grate surface.	Date of contract trial.	Contract trial speed.	Total maximum indicated horse-power.	Total bunker capacity.	Coal endurance at 10 knots per hour.	Total weight of machinery.	Date of first commission.	Date of latest recommission.	Present condition of machinery.
		Knots.		Tons.	Knots.	Tons.			
31.29	a3,000	386	2,909	292.8	Feb. 10, 1896	Good.
35.32 Jan. 5, 1893	13.6	5,243.92	220	1,430	451.92	Feb. 13, 1893	.....	Do.
29.79 Jan. 19, 1894	19.056	5,484.22	351	3,200	401.27	June 21, 1894	.....	Engines good, boilers fair.
50.00 Apr. 17, 1898	24.0	a1,750	b28	.....	32.39	May 11, 1898	.....	Good.
37.04 May 14, 1897	16.299	2,535.85	395	3,400	170.74	Aug. 19, 1897	.....	Do.
30.80 Dec. 22, 1890	b19.0	8,868.57	790	5,656	653	Feb. 2, 1891	May 21, 1898	Do.	
.....	b21.0	b7,500	b800	.....	.....	Mar. 18, 1898	.....	Do.
32.06 May 27, 1897	12.29	1,008.75	232	3,967	109.69	Oct. 5, 1897	.....	Do.
31.32 May 22, 1893	21	17,401.42	1,200	5,000	1,311.30	Aug. 1, 1893	.....	Do.
34.1 Dec. 15, 1893	21.686	17,312.08	1,100	6,105	1,162.56	Feb. 5, 1895	.....	Do.
30.44 May 14, 1896	16.791	11,111.025	1,590	5,500	1,009.232	July 15, 1896	.....	Do.
30 Aug. 19, 1889	11.55	1,044.79	200	4,000	112.50	Dec. 10, 1889	Dec. 16, 1896	Engines good, boilers fair.	
32.32 June 25, 1890	19.678	8,814.79	1,020	6,354	705.36	July 28, 1890	July 9, 1898	Good.	
31.09 Feb. 10, 1897	28.63	.....	43	.....	62.75	Feb. 20, 1897	.....	Do.
32.35 May 12, 1898	.....	923	.....	.....	104.46	May 27, 1898	.....	Do.
32.25	b12.5	b3,700	310	.....	.....	Dec. 10, 1896	.....	Engines good, boilers fair.
32.22 (c)	b20	10,000 (a)	539	2,940	783.40	Apr. 17, 1894	.....	Good.

a Designed.

b Estimated.

c Built by United States.

Completed vessels authorized

Name of vessel.	Type of vessel.	Type of engines.	Cylinder diameters in inches.			Stroke.	Number and types of boilers.	Total grate surface.	Total heating surface.
			H. P.	I. P.	L. P.				
						In.		Sq. ft.	Sq. ft.
Rodgers	Torpedo boat.	Vertical, triple expansion, 2 screws.	12	19.25	{a22 a22}	16	{2 Mosher tubulous.	95	5,200
San Francisco	Protected cruiser.	Horizontal, triple expansion, 2 screws.	42	60	84	36	4 double-ended and 1 single-ended cylindrical.	567.6	20,133.76
Somers b.....	Torpedo boat.	Vertical, triple expansion, single screw. Inclined compound, 2 screws.	12.5	18	25	18.5	1 Normand, tubulous.	36	1,670
Talbot	do								
Terrace	Double-turret monitor.		32	.....	48	42	6 single-ended, cylindrical.	378	3,781
Texas	Battle ship, second class.	Vertical, triple expansion, 2 screws.	36	51	78	39	4 double-ended cylindrical.	531.6	16,912.4
Topeka d	Gunboat	Horizontal, compound, 2 screws.	30	.....	60	36	2 double-ended and 2 single-ended cylindrical.		
Vesuvius	{Dynamite gunboat.	{4 cylinder, vertical, triple expansion, 2 screws	21½	31	{a34 a34}	20	{4 marine locomotive.	195	8,901
Vicksburg	Composite gunboat.	Vertical, triple expansion, 1 screw.	15½	23½	36	30	2 single-ended cylindrical.	78	2,324
Wheeling	do	Vertical, triple expansion, 2 screws.	12	16	28	18	2 single-ended, cylindrical. Howden forced-draft system.	60	2,508.46
Wilmington	Gunboat	Vertical, triple expansion, 2 screws.	14.5	22	33.75	18	6 single-ended cylindrical.	126	4,800
Winslow	Torpedo boat.	do	12	19.25	{a22 a22}	16	{2 "Mosher" tubulous.	95	5,200
Yorktown	Gunboat	Horizontal, triple expansion, 2 screws.	22	31	50	30	4 straight-way cylindrical.	220	2,091.87

a Two L. P. cylinders.

b Purchased in Germany; laid up in England.

c Authorized previous to 1883, but subsequently remodeled.

d Purchased in England.

subsequent to March 2, 1883--Continued.

Ratio of heating to grate surface.	Date of contract trial.	Contract trial speed.	Total maximum indicated horse-power.	Total bunker capacity.	Coal endurance at 10 knots per hour.	Total weight of machinery.	Date of first commission.	Date of latest recommission.	Present condition of machinery.
		Knots.		Tons	Knots	Tons.			
53.36	Mar. 19, 1898	24.5	a2,000	42	b1,200	45.41	Apr. 2, 1898		{Needs repairs.
35.47	Aug. 27, 1890	19.525	10,604.32	627	4,000	749.12	Nov. 15, 1890		Good.
49.21	Mar. 3, 1898	21.15	1,900 c850			15.56	Apr. 4, 1898		Good.
23.23		c12.0	d1,600	260	1,300	486.88	Apr. 15, 1896		Do.
31.8	Dec. 19, 1896	c17	8,610	830	2,900	692.64	Aug. 15, 1896	July 20, 1896	Do.
		c16	a2,200	300	a3,800		May 2, 1898		Formerly Diogenes. Good.
46.05	Jan. 11, 1899	21.646	4,293	145	1,600	214.93	June 7, 1899	Jan. 12, 1897	{Engine: goods boilers in need of repair.
32.06	May 29, 1897	12.71	1,118.24	235	4,000	109.67	Oct. 23, 1897		Good.
41.3	... do ...	12.88	1,079.78	226	4,000	115.61	Aug. 10, 1897		Do.
28.1	Mar. 27, 1897	15.676	1,894.37	280	2,200	185.15	May 13, 1897		Do.
53.36	Dec. 1, 1897	24.82	a2,000	42	b1,200	45.44	Dec. 29, 1897		Do.
36.78	Feb. 15, 1880	16.14	3,392.26	400	3,624	264.38	Apr. 23, 1880	(c)	Repairing at Mare Island Navy Yard.

a Designed.

b At 14 knots.

c Estimated

d Authorized previous to 1883, but subsequently modeled.

e Out of commission.

VESSELS AUTHORIZED PREVIOUS TO MARCH 2, 1883, AND TUGS.

Adams (wooden cruiser).—Engines and boilers in fair condition. Out of commission at Mare Island Navy-Yard.

Ajax (single-turret monitor).—Engines in fair condition; boilers poor.

Alarm (torpedo ram).—In ordinary at Brooklyn Navy-Yard. Engines and boilers in fair condition.

Alert (third-rate iron cruiser).—Engines and boilers in need of repairs. Out of commission.

Alliance (wooden cruiser).—Engines and boilers in fair condition. Training ship.

Comanche (single-turret monitor).—Engines and boilers in fair condition. Repairing at Mare Island Navy-Yard.

Canonicus (single-turret monitor).—Engines in fair condition. Old boilers removed and two new double-ended Babcock & Wilcox boilers installed. (Total heating surface, 6,000 square feet; total grate surface, 200 square feet.)

Catskill (single-turret monitor).—Engines in fair condition; boilers poor. Commissioned April 16, 1898.

Enterprise (wooden cruiser).—Detailed as school-ship for Massachusetts and stationed at Boston.

Essex (wooden cruiser).—Engines and boilers in fair condition. Training ship.

Fern (tender).—Engines and main boiler in good condition; auxiliary boiler fair.

Fortune (tug).—Out of commission; being fitted with new machinery, Norfolk Navy-Yard.

Franklin (wooden frigate).—Engines well cared for, but of obsolete type. Auxiliary boilers in good condition. Employed as receiving ship at Norfolk Navy-Yard. The machinery should be removed and used as old material.

Hartford (wooden cruiser).—In ordinary. New machinery building at Mare Island Navy-Yard.

Iroquois (wooden cruiser).—Machinery and boilers worn out and obsolete. Transferred to Marine-Hospital Service.

Iwana (tug).—Machinery and boilers in good condition. Yard tug at Boston.

Jason (single-turret monitor).—Engines in fair condition; boilers poor. Commissioned May 16, 1898.

Lancaster (wooden cruiser).—Engines and boilers in fair condition, but of antiquated type.

Lehigh (single-turret monitor).—Engines and boilers in fair condition. Commissioned April 18, 1898.

Leyden (tug).—Engines and boilers in good condition. With North Atlantic fleet.

Mahopac (single-turret monitor).—Engines in fair condition. Old boilers removed and two new double-ended Babcock & Wilcox boilers installed. (Total heating surface, 6,000 square feet; total grate surface, 200 square feet.)

Manhattan (single-turret monitor).—Engines in fair condition. Old boilers removed and two new double-ended Babcock & Wilcox boilers installed. (Total heating surface, 6,000 square feet; total grate surface, 200 square feet.)

Marion (wooden cruiser).—Engines and boilers fair. Out of commission at Mare Island Navy-Yard.

Michigan (paddle steamer).—Engines and boilers in good condition. In service on the Great Lakes.

Minnesota (wooden frigate).—Used by naval militia, Massachusetts.

Mohican (wooden cruiser).—Engines fair; boilers poor. Commissioned January 10, 1898.

Monocacy (iron, paddle-wheel).—Engines and boilers in fair condition. In commission.

Montauk (single-turret monitor).—Engines and boilers in fair condition. Commissioned April 18, 1898.

Nahant (single-turret monitor).—Engines in fair condition; boilers poor.

Nantucket (single-turret monitor).—Engines and boilers in fair condition.

Narkeeta (tug).—Engines and boilers in fair condition. Yard tug at New York Navy-Yard.

Nina (tug).—Machinery in good condition. Yard tug at New York Navy-Yard.

Nipsic (wooden cruiser).—Machinery worn out and unfit for further service. In ordinary at Puget Sound Naval Station.

Omaha (wooden cruiser).—Engines obsolete; boilers worn out. Transferred to the Marine-Hospital Service.

Passaic (single-turret monitor).—Engines and boilers in fair condition.

Pensacola (wooden frigate).—Old machinery removed. Two cylindrical boilers and a distilling and pumping plant installed. Apprentice ship at Mare Island Navy-Yard.

Pinta (armed tug).—Engines of obsolete type; boilers worthless. Out of commission.

Ranger (third-rate iron cruiser).—Out of commission. Machinery removed, and being cared for in steam engineering shop at Mare Island Navy-Yard.

Richmond (wooden cruiser).—Engines and main boilers in fair condition; auxiliary boilers poor. Receiving ship at League Island, Pa.

Samoset (tug).—Engines and boilers in good condition. Yard tug at Key West.

Standish (cadet practice ship).—Engines and boilers in good condition.

Thetis (special-service vessel).—In ordinary. Engines and boilers in fair condition.

Traffic (tug).—Engines and boilers in good condition. Navy-yard, New York.

Triton (tug).—Engines and boilers in good condition. Yard tug at Washington.

Unadilla (tug).—Engines and boilers in good condition. Yard tug at Mare Island Navy-Yard.

Wabash (wooden frigate).—Machinery obsolete, worn out, and condemned. Receiving ship at Boston Navy-Yard.

Wahnet (tug).—Engines and boilers in good condition. Yard tug at Norfolk.

Wyandotte (single-turret monitor).—Engines and boilers in fair condition.

Yantic (wooden gunboat).—Used by naval militia, Michigan.

The machinery of the following vessels, composing the auxiliary navy, is, from latest reports, in good or fair condition: *Abarenda*, *Accomack*, *Actire*, *Ailecn*, *Albatross*, *Alexander*, *Algonquin*, *Alice*, *Apache*, *Arctic*, *Armeria*, *Bache*, *Badger*, *Blake*, *Brutus*, *Buffalo*, *Cesar*, *Calumet*, *Cassius*, *Celtic*, *Cheyenne*, *Chickasaw*, *Choctaw*, *Corwin*, *Iris*, *Dorothea*, *Eagle*, *East Boston*, *Elfrida*, *Enquirer*, *Fish Hawk*, *Fortune*, *Free Lance*, *Frolic*, *Gedney*, *Glacier*, *Gloucester*, *Governor Russell*, *Grant*, *Gresham*, *Guthrie*, *Hamilton*, *Hannibal*, *Harrard*, *Hawk*, *Hector*, *Hercules*, *Hist*, *Hornet*, *Hudson*, *Huntress*, *Inca*, *Iris*, *Iroquois*, *Iwana*, *Justin*, *Kanawha*, *Lebanon*, *Leonidas*, *Leyden*, *Mangrove*, *Manning*, *Maple*, *Marcellus*, *Massasoit*, *McArthur*, *McCulloch*, *McLane*, *Modoo*, *Mohawk*, *Morrill*, *Nanshan*, *Narkeeta*, *Nero*, *Nezinscot*, *Niagara*, *Nina*, *Oneida*, *Osceola*, *Panther*, *Patterson*, *Pawnee*, *Peoria*, *Perry*, *Piscataqua*, *Pompey*, *Pontiac*, *Potomac*, *Powhatan*, *Prairie*, *Rainbow*, *Resolute*, *Restless*, *Rocket*, *Rush*, *Samoset*, *Saturn*, *Scindia*, *Scipio*, *Scorpion*, *Seminole*, *Shearwater*, *Sioux*, *Siren*, *Solace*, *Southery*, *Standish*, *Sterling*, *St. Louis*, *St. Paul*, *Stranger*, *Supply*, *Swanee*, *Sylph*, *Sylvia*, *Tacoma*, *Tecumseh*, *Traffic*, *Triton*, *Unadilla*, *Uncas*, *Vigilant*, *Viking*, *Vixen*, *Vulcan*, *Waban*, *Wasp*, *Windom*, *Wompatuck*, *Woodbury*, *Yale*, *Yankee*, *Yankton*, *Yosemite*, *Zafiro*.

CONDITION OF MACHINERY ON AUGUST 1, 1898, OF VESSELS COMPLETED OR BUILDING DURING THE PRECEDING YEAR.

Battle ship No. 5 (Kearsarge).—Date of contract, January 2, 1896. Date to be completed, January 2, 1899. Contract price, \$2,250,000. Contractors, Newport News Shipbuilding and Dry Dock Company, Newport News, Va. Machinery about nine-tenths completed and erected on board.

At the request of the contractors, the following changes have been made: Diameter of steam and exhaust pipes to the dynamo engines increased on account of the substitution of electric for hydraulic power for turning the turrets; the lead of the main air pump exhaust has been changed; ash hoists to be operated from the deck only; change in location of shackles for smoke-pipe guys; connection between the auxiliary exhaust pipe and the main air pump omitted; change in the arrangement of indicator cocks; slight changes in arrangement and location of suction pipes and valves; slight change made in casing and boiler stop valve gear; change in design of boiler manhole plates from dished plates to double plates secured by rivets.

The Bureau directed the following changes: Outboard composition casing in the propeller shafts to be insulated by being served with wire cover with insulation about one-fourth inch in diameter, the turns to be laid up close, and the whole surface covered with three coats of paint, making a water-tight covering over the composition casing. Propeller hubs and tail pieces to be tinned to prevent galvanic action.

Battle ship No. 6 (Kentucky).—Contract, the same as that for battle ship No. 5, the *Kearsarge*. The condition of machinery is the same, and the changes requested by the contractors and directed by the Bureau are the same.

Battle ship No. 7 (Illinois).—Date of contract, September 26, 1896. Date to be completed, September 26, 1899. Contract price, \$2,595,900. Contractors, Newport News Shipbuilding and Dry Dock Company, Newport News, Va. Machinery about one-half completed.

The following changes were made at the request of the contractors: Slight changes in uptakes and fittings; the use of magnesia clothing with galvanized iron lagging on the evaporators; the hydraulic plant for power for operating the turrets was omitted and electric power substituted; screw stays fitted in steam ports of the high-pressure cylinder; stroke of the shaper to be fitted in the workshop altered; arrangement of indicators changed; slight change in boiler covering; change in smoke-pipe guys; change in main steam pipes due to change in location of workshop; steam and exhaust pipes to dynamo engines changed on account of the substitution of

electric for hydraulic power for turning the turrets; design of boiler manhole plates changed from dished to built-up form.

At the request of the Bureau, the design of smoke pipe was changed.

Battleship No. 8 (Alabama).—Date of contract, September 24, 1896. Date to be completed, September 24, 1899. Contract price, \$2,650,000. Machinery about nine-tenths completed. All the boilers are in place on board and all the parts of the main engines are installed. Most of the steam and exhaust piping is fitted in place and the small details are being completed. Contractors, William Cramp & Sons' Ship and Engine Building Company, Philadelphia, Pa.

At the request of the contractors, the following changes have been approved: T-pieces for copper pipes to be made of composition; teak wood to be substituted for black walnut for lagging; electric power substituted for hydraulic for turning the turrets; change in design of lubrication; change in location of test coupons on propeller blades; use of corrugated copper gaskets in pipe joints.

At the request of the Bureau the following changes were made: The ladders in the engine rooms were increased and changes made in the steam and exhaust piping on this account; steam, exhaust, and water piping fitted for the air compressors of torpedo tubes.

Battleship No. 9 (Wisconsin).—Date of contract, September 19, 1896. Date to be completed, September 19, 1899. Contract price, \$2,674,950. Contractors, Union Iron Works, San Francisco, Cal. Machinery about eight-tenths completed.

The following changes requested by the contractors were approved: Diameter of outboard delivery pipe increased from 15½ to 16 inches; hydraulic pumping plant to be omitted and electric power substituted for turning the turrets; floor plates to be checkered instead of flat top corrugations.

The following changes were directed to be made by the Bureau: Additional spare parts to be furnished by the contractors; propeller blades, hubs, and tail pieces to be tinned to prevent galvanic action; safety sluice valves to be fitted inboard of the main injection and outboard delivery valve.

Gunboat No. 13 (Princeton).—Date of contract, November 20, 1895. Date to be completed, February 20, 1896. Contract price, \$230,000. Contractors John H. Dialogue & Son, Camden, N. J. Vessel completed and Bureau recommended preliminary acceptance July 8, 1898, and vessel now in commission.

Torpedo boat No. 4 (Rodgers).—Date of contract, May 3, 1895. Date to be completed, August 3, 1896. Contract price, \$97,500. Contractors, Columbian Iron Works and Dry Dock Company, Baltimore, Md. The machinery having passed a successful trial the boat was preliminarily accepted April 19, 1898.

Torpedo boat No. 5 (Winslow).—Date of contract, May 3, 1895. Date to be completed, August 3, 1896. Contract price, \$97,500. Contractors, Columbian Iron Works and Dry Dock Company, Baltimore, Md. The machinery having passed a successful trial the boat was preliminarily accepted on December 20, 1897, and is now in commission.

Torpedo boat No. 8 (Rowan).—Date of contract, October 19, 1895. Date to be completed, January 19, 1897. Contract price, \$160,000. Contractors, Moran Brothers Co., Seattle, Wash.

The following changes requested by the contractors have been approved: Change in design of lubricating gear; change in design of radiators; dimensions of auxiliary pumps changed; slight change in design of pump check valves; change in location of evaporator blowers; change in design of journals working in bushings; change in design of piston packing, and clothing and lagging; wheels to be fitted on boiler check valves instead of bent handlebars; omission of speaking tube between engine rooms; change in the method of securing the rods in the main pistons.

At the request of the Bureau, steam, exhaust, and water piping was fitted for the air compressors for torpedoes.

The machinery has been completed but has not yet been tried.

Torpedo boat No. 9 (Dahlgren).—Date of contract, October 6, 1896. Date to be completed, April 6, 1898. Contract price, \$194,000. Contractors, Bath Iron Works, Bath, Me. Machinery about 75 per cent completed.

At the request of the contractors the following changes have been approved: Hand wheels on the injection and outboard delivery valves to be omitted and ratchets substituted; change in design of bed plates; engine columns to be made of manganese bronze instead of cast steel; throttle valve casing and head of feed-water heaters to be made of manganese bronze instead of cast steel; 5 and 7 inch steam pipes to be lap-welded steel pipe instead of solid drawn.

Torpedo boat No. 10 (T. A. M. Craven).—All data for this vessel the same as that for torpedo boat No. 9, the *Dahlgren*.

Torpedo boat No. 11 (Farragut).—Date of contract, October 5, 1896. Date to be completed, October 5, 1898. Contract price, \$227,500. Contractors, Union Iron Works, San Francisco, Cal. The *Farragut* was launched 9.30 p. m. July 16, 1898. The machinery is completed and is now ready for trial.

At the request of the contractors the following changes have been approved: Facings on cylinders for drain valves omitted; tubes in distilling apparatus to be

made of copper instead of brass; change in pumps for pumping out hot well; gauge on feed tank to be omitted; floor plates to be made of ribbed plate No. 10 B. W. G. instead of checkered plates one-eighth inch thick; waste lockers to be made with a capacity of 100 pounds.

Torpedo boat No. 12 (Doris).—Date of contract, October 6, 1896. Date to be completed, October 6, 1897. Contract price, \$81,546. Contractors, Wolff & Zwicker Iron Works, Portland, Oreg.

The following changes proposed by the contractors have been approved: Vertical independent Blake pump substituted for pumps worked from the main engines; filter for distilling apparatus to be omitted; one gauge glass on boiler drums to be omitted; feed-water heater to be fitted; slight change in design of water-service pipes; change in design of pipes for extinguishing fire in boiler furnaces; low pressure cylinder heads to be made of composition instead of cast steel.

At the request of the Bureau the following changes have been made: Condenser tubes to be tinned; thrust bearing fitted for valve-motion shaft; casing fitted on gear wheels for valve motion. The machinery is now practically completed and ready for trial.

At the request of the contractors the trial will be made by standardizing the screw.

Torpedo boat No. 13 (Far).—Date of contract and other data the same as for torpedo boat No. 12, the *Doris*.

Torpedo boat No. 14 (Morris).—Date of contract, October 6, 1896. Date to be completed, October 6, 1897. Contract price, \$85,000. Contractors, Herreshoff Manufacturing Company, Bristol, R. I. The machinery is completed, and the vessel, having passed a successful trial, was preliminarily accepted May 14, 1898, and is now in commission. Mechanical engine-room telegraphs of standard design were fitted instead of the design proposed by the contractors.

Torpedo boat No. 15 (Talbot).—Date of contract, October 6, 1896. Date to be completed, October 6, 1897. Contract price, \$39,000. Contractors, Herreshoff Manufacturing Company, Bristol, R. I. The boat, having passed a successful preliminary trial, was accepted March 26, 1898, and is now in commission.

The following changes were made by direction of the Bureau: The oil-burning plant which it was intended to install on this vessel in order to make a competitive trial between the sister ships, one fitted to burn coal and the other oil, was omitted and will be installed at a navy-yard when the boat can be spared; mechanical engine-room telegraphs of standard design were fitted instead of the ones proposed by the contractors.

Torpedo boat No. 16 (Gwin).—Date of contract, October 6, 1896. Date to be completed, October 6, 1897. Contract price, \$39,000. Contractors, Herreshoff Manufacturing Company, Bristol, R. I. The machinery is completed, and the boat, having passed a successful trial, was preliminarily accepted March 26, 1898, and is now in commission.

The following changes were made by direction of the Bureau: Mechanical engine-room telegraphs of standard design were substituted for the ones proposed by the contractors.

Torpedo boat No. 17 (Mackenzie).—Date of contract, October 7, 1896. Date to be completed, October 7, 1897. Contract price, \$48,500. Contractors, Charles Hillman Ship and Engine Building Company, Philadelphia.

The following changes proposed by the contractors were approved: Pitch of propellers to be made 6 feet 3 inches; by direction of the Bureau, the contractors furnish spare parts and install radiators and an evaporating plant. The machinery is practically completed and the vessel nearly ready for trial.

Torpedo boat No. 18 (McKee).—Date of contract, October 7, 1896. Date to be completed, October 7, 1897. Contract price, \$45,000. Contractors, Columbian Iron Works and Dry Dock Company, Baltimore, Md. The machinery having passed a successful trial, the boat was preliminarily accepted on May 24, 1898, and is now in commission.

At the request of the contractors, the following changes have been approved: Change in engine-room hatch; change in design of throttle valve; change in design of pipe connections.

By direction of the Bureau, steam, exhaust, and water piping were fitted for the air compressors for torpedoes.

Torpedo boat No. 19 (Stringham).—Date of contract, July 29, 1897. Date to be completed, January 29, 1899. Contract price, \$236,000. Contractors, Harlan & Hollingsworth Company, Wilmington, Del. Machinery about one-half completed.

At the request of the contractors, the following changes have been approved: Change in design of stuffing boxes for the piston rods; diameter of receiver nozzle increased from 9 to 9½ inches; slight changes in dimensions of crank shafts; hand turning gear to be made of commercial steel; diameter of high-pressure cylinder changed from 21½ to 22 inches; slight change in design of piston and connecting rods and crossheads; change in design of boiler stop and safety valves; slight change in design of thrust bearings; threads on bolts of connecting rods to be made special;

short bends in exhaust pipes were approved and made of copper; change in design of shafts; certain of the boiler tubes were electroplated in order to test the durability of this method of preservation of tubes; slight change in design of forced-draft blowers; grate bars to be of steel instead of wrought iron; change in design of condensers; steam pipes to be made of lap-welded steel instead of iron; change in design of thrust bearings; slight change in design of condenser; diameter of throttle valve increased from 8½ to 9½ inches.

Torpedo boat No. 20 (Goldsborough).—Date of contract, July 13, 1897. Date to be completed, July 13, 1899. Contract price, \$214,500. Contractors, Wolff & Zwicker Iron Works, Portland, Oreg. Work on the machinery of this vessel has been very much delayed, and is only about one-fourth completed.

The following changes, requested by the contractors, have been approved: Diameter of high-pressure cylinders changed from 19½ to 19¾ inches and low pressure from 35 to 35½; boilers to be of the Thornycroft type; only one curved condenser to be fitted; diameter of main bearings increased to 7 inches; shafting to be made of forged nickel steel; design of pistons changed; design of connecting rods changed; corrugated copper gaskets to be fitted between the flanges of cylinder heads and cylinders; slight changes in piston rods and crosshead guides; sight holes cut in the back ends of the steam drums, in order to facilitate welding the heads in place; pumps to be simplex instead of duplex; general design of the boat and location of the machinery changed in June, 1898, which change at this late date has delayed the construction of the machinery.

Torpedo boat No. 21 (Bailey).—Date of contract, July 28, 1897. Date to be completed, January 28, 1899. Contract price, \$210,000. Contractors, Gas Engine and Power Company and Charles L. Seabury & Co., Morris Heights, N. Y.

The following changes requested by the contractors have been approved: Change in design of connecting rods, crank pins, and piston rods; change in design of shafting; diameter of cylinders changed from 20, 29, and 30 to 20, 30½, and 32; change in design of main valves; change in design of condenser; stern-tube bearings to be lined with white metal instead of lignum vitæ; change in design of air pumps; throttle valve changed from 8 to 7 inches; use of genuine Babbitt approved for lining the bearings; change in design of evaporators.

The contractors have been very much delayed by the failure to pass a successful test of the welded steam and water drums of the boilers, and the machinery is about four-tenths completed.

Holland submarine torpedo boat Plunger.—The John P. Holland Torpedo Boat Company sublet the contract to the Columbian Iron Works and Dry Dock Company, Baltimore, Md. Date of contract, March 13, 1895. Date to be completed, March 14, 1896. Contract price, \$150,000. Machinery is practically completed, but has not yet been successfully tried.

* * * * *

LESSONS FROM THE WAR.

The war which has just ended is the first in which modern steam vessels have had a thorough trial, and it seems pertinent to note the more important lessons which have been taught by our experience. With respect to the machinery they are as follows:

1. The vital necessity of giving the machinery of vessels in reserve frequent tests under working conditions, so that any defects may be discovered and remedied before war makes the vessels' services absolutely necessary. In several cases defects were found after the ships had begun cruising, and the repairs laid them up in the midst of the war.

2. The great importance of having all our naval stations in positions of strategic value properly fitted out for repairs and with adequate supplies of nonperishable stores. It had been evident for a long time that Key West was such a station, but money to put in a proper repair plant was refused year after year, and only granted after the war had begun. The movement of large bodies of troops and their equipment almost blocked the railroads, so that after the beginning of the war it was almost impossible to secure the forwarding of tools and supplies.

3. That fresh water for the boilers is almost as important as coal, and that a distilling ship is an important adjunct of a fleet operating away from a base where fresh water can be readily obtained.

4. That every fleet needs a repair ship to enable the efficiency to be

maintained without leaving the station, and consequently that several ships should be equipped so as to be ready to proceed with the fleet.

5. The great tactical advantages of water-tube boilers. This has already been discussed under another head.

6. That if more than two main engines are to be fitted, there should be three engines driving three screws, and not two main engines on each shaft. The *New York* and *Brooklyn* had their forward engines disconnected at the time of the Santiago fight and could not stop to couple them. An accident to any part of either of the two engines on a shaft disables half the power; in the three-screw ship this fraction would be only a third.

7. That there should be frequent trials under forced draft to keep the blowers in good condition and to make the men thoroughly familiar with working under maximum conditions. It appears that some of the ships had never been under forced draft since their contract trials until the day of the fight at Santiago.

8. That the location of the forced-draft blowers is a matter of serious importance. In some of our ships, owing to the demands for all other space for other purposes, the blowers had to be located in corners or pockets in the fire rooms, where it was impossible for human beings to give them proper attention, owing to the intense heat due to lack of ventilation. In the *Cincinnati* temperatures as high as 205° Fahrenheit were noted, and the commanding officer, when investigating the case personally, had his face scorched. The blowers must be placed where they can be properly cared for, or else they are useless, and might as well be left on shore.

9. That the personnel of the service should be adequate to the material. It has been notorious for sometime that this is not the case, and we are providing for a decided increase in the number of vessels with no increase whatever in the personnel. By sending nearly every officer on the active list to sea we were able to give the regular ships a fair complement of trained ones, but had the war been of long duration we should have been greatly embarrassed to supply the places of those disabled or invalided. Volunteers, however well trained in other ways, can not entirely replace the regular officer.

10. That we must make provision for training the enlisted men of the Engineer Department. Many of the colliers and auxiliary vessels had to start out with absolutely green crews, many of whom, so far from having the "sea habit," had never been on a vessel of any kind. This must be remedied if our enlarged fleet is to be efficient.

11. That our fighting ships must have the highest practicable speed. There is an almost general agreement on this point among naval men, but if any had thought that this did not apply to battle ships the fight at Santiago must have shown that the highest practicable speed is just as important in these vessels. It is very gratifying, therefore, that our three new battle ships are to have speeds of at least 18 knots, which is now recognized as the standard.

TRIALS OF NEW VESSELS.

This is usually one of the most interesting features of the Bureau's report, but this year, owing to the vital importance of sending every fighting unit to the front as soon as available, it became necessary to limit the trials to a determination of the integrity of the machinery under maximum conditions, without attempting the careful observation and collection of data which usually obtains. The results given below contain all the data that could be secured under the circumstances.

Torpedo boats.

1	Name of vessel.....	GWIN.....	McKEE.....
2	Date of trial.....	Mar. 3, 1898.....	May 2, 1898.....
3	Duration of trial.....	2 hours.....	2 hours.....
4	Place of trial.....	Narragansett Bay.....	Chesapeake Bay.....
5	Condition of sea and wind.....	Smooth, calm.....	Smooth, calm.....
6	Length on water line.....	100 feet.....	101 feet.....
7	Beam at water line.....	12 feet.....	12 feet 6½ inches.....
8	Draft, mean, on trial.....	3 feet 9½ inches.....	4 feet 8½ inches.....
9	Displacement, tons.....	44.5.....	78.....
10	Immersed midship section, square feet.....	32.35.....	43.....
11	Coefficient of fineness, prismatic.....	.3452.....	.4511.....
12	Type of engines.....	Triple expansion, vertical.....	4 cylinders; triple expansion, vertical.....
13	Cylinder diameters in inches	High pressure.....	12.....
14		Int. pressure.....	18.....
15		Low pressure.....	25.....
16	Stroke of piston, inches.....	13½.....	(2) 22.....
17	Number and type of boilers.....	1 modified Normand.....	2 Thornycroft.....
18	Length and width of boilers.....	Length, 10 ft. 11 inches; width, 8 ft. 4½ inches; height, 8 ft. 1½ inches.....	Length, 8 feet 4 inches; width, 7 feet 1 inch; height, 7 ft. 4 inches.....
19	Length and width of grates.....	Length, 8 feet; width, 4 feet 9 inches.....	Length, 4 ft. 10½ inches; width, 4 ft. 1½ inches.....
20	Grate surface used on trial, square feet.....	38.....	40.2.....
21	Heating surface used on trial, square feet.....	1,870.....	2,294.....
22	Condensing surface used on trial, square feet.....	600.....	677.4.....
23	Screw propellers.	Diameter.....	4 feet 7 inches.....
24		Pitch, mean.....	5 feet 6 inches.....
25	Area developed, square feet.....	1 screw, 6.05.....	7 feet 2 inches.....
26		3.....	1 screw, 11.4.....
27	Number of blades, each.....	204.....	3.....
28	At engines, per gauge.....	84.....	211.....
29		21.3.....	85.....
30	Vacuum in condensers, in inches of mercury....	24.6.....	23.....
31	Revolutions of main engines, per minute.....	24.6.....	25.2.....
32	Speed per hour, in knots.....	443.8.....	207.....
33	Slip of propeller (mean), per cent.....	20.88.....	19.8.....
34	Air pressure, in inches of water.....	23.84.....	16.60.....
		2.94.....	3.....

Torpedo boats.

MORRIS.....	ROCKERS.....	YALBOT.....	WING.....	1
Apr. 17, 1899.....	Mar. 22, 1899.....	Mar. 2, 1899.....	Mar. 2, 1899.....	2
2 hours.....	2 hours.....	2 hours.....	2 hours.....	3
Narragansett Bay.....	Chesapeake Bay.....	Narragansett Bay.....	Chesapeake Bay.....	4
Smooth, calm.....	Smooth, calm.....	Smooth, calm.....	Smooth, calm.....	5
128 feet 6 inches.....	100 feet.....	144 feet.....	100 feet.....	6
15 feet.....	16 feet.....	12 feet.....	15 feet.....	7
4 feet 3 inches.....	4 feet 11½ inches.....	3 feet ¾ inches.....	4 feet 1½ inches.....	8
98.....	143.....	45½.....	147.....	9
45.84.....	52.50.....	25.67.....	52.5.....	10
.3284.....	.3917.....	.353.....	.353.....	11
Triple expansion, vertical.....	4 cylinders: triple expansion, vertical.....	Triple expansion, vertical.....	4 cylinders: triple expansion, vertical.....	12
12½.....	12.....	12½.....	12.....	13
18.....	18½.....	18.....	18.....	14
25.....	(a) 22.....	25.....	(a) 22.....	15
13½.....	16.....	13½.....	14.....	16
2 modified Normand ..	2 Mosher.....	1 modified Normand ..	2 Mosher.....	17
Length, 10 ft. 2 inches:	Length, 10 ft. 4 inches:	Length, 14 ft. 11 inches:	Length, 14 ft. 4 inches:	18
width, 9 ft. 4½ inches:	width, 9 ft. 7½ inches:	width, 8 ft. 4½ inches:	width, 9 ft. 7½ inches:	
height, 9 feet.	height, 7 ft. 8½ inches:	height, 8 ft. 1½ inches:	height, 7 ft. 8½ inches:	
Length, 7 ft. 1½ inches:	Length, 7 feet 6 inches:	Length, 8 feet: width,	Length, 7 feet 6 inches:	19
width, 5 ft. 8 inches.	width, 6 feet 4 inches.	4 feet 9 inches.	width, 6 feet 4 inches.	
80.....	95.....	26.....	95.....	20
4,004.....	5,300.....	1,779.....	5,300.....	21
1,195.....	1,040.....	600.....	1,040.....	22
4 feet 2 inches.....	5 feet 3 inches.....	4 feet 6½ inches.....	5 feet 3 inches.....	23
Port, 6.25 feet: starboard, 6.19 feet.	Port, 7 feet 8½ inches: starboard, 7 feet 11 inches.	6.26 feet.....	Port, 7 feet 8½ inches: starboard, 7 feet 11 inches.	24
2 screws, 12.10.....	2 screws, 19.35.....	1 screw, 6.05.....	2 screws, 19.35.....	25
3.....	3.....	3.....	3.....	26
Port, 192: starboard, 191.	231.8.....	134.8.....	Port, 246: starboard, 257.	27
Port, 79.1: starboard, 79.3.	Port, 94.2: starboard, 73.6.	73.5.....	Port, 227: starboard, 79.	28
Port, 21.7: starboard, 20.4.	Port, 24.8: starboard, 24.9.	21.8.....	Port, 29.2: starboard, 27.1.	29
25.....	Port, 22.75: starboard, 23.5.	22.4.....	Port, 22.15: starboard, 22.75.	30
Port, 452.5: starboard, 451.4.	404.....	439.4.....	Port, 304.55: starboard, 303.2.	31
24.....	(a).....	21.15.....	34.25.....	32
13.52.....	b 20.31.....	19.4.....	18.77.....	33
1½.....	2.47.....	2.3.....	7.25.....	34

a See table following.

b At 24.91 knots.

U. S. S. Princeton.

1	Name of vessel	Princeton, gunboat No. 11	
2	Date of trial	May 12, 1890.	
3	Duration of trial	Four hours.	
4	Place of trial	Delaware River.	
5	Condition of sea and wind	Smooth, no wind.	
6	Length on water line, feet	108.12	
7	Breadth, feet	26	
8	Draft, mean, on trial, feet	11.15	
9	Displacement, tons	1,425	
10	Immersed midship section, square feet	380	
11	Coefficient of fineness (prismatic)	.857	
12	Type of engines	Triples expansion, vertical	
13	Cylinder diameters in inches	High pressure	15.15
14		Int. pressure	17.5
15		Low pressure	16
16	Stroke of pistons, inches		30
17	Number and type of boilers	Two single ended	
18	Length and diameter of boilers, feet	12' 6" by 26' 6"	
19	Furnaces, number and diameter	Four 36"	
20	Grate surface used on trial, square feet		75
21	Heating surface used on trial, square feet		2,324.46
22	Condensing surface used on trial, square feet		1,120
23	Screw propeller	Diameter, feet	14
24		Pitch, mean, feet	14
25		Area developed, square feet	31
26		Number of blades	4
27	Steam pressure in pounds	In boilers, per gauge	168.5
28		At engines, per gauge	144.2
29		In first receiver, absolute	36.4
30		In second receiver, absolute	15.2
31	Vacuum in condenser in inches of mercury		26
32	Revolutions of main engines per minute		172.7
33	Mean pressures in pounds per square inch	High pressure	65.6
34		Int. pressure	30.5
35		Low pressure	26.8
36		Equivalent on low pressure	49.05
37		High pressure	217
38		Int. pressure	315
39		Low pressure	301
40		Aggregate, main engine	923
41	Indicated horse-power	Air pump	Worked from main engine.
42		Circulating-pump engines	2.52
43		Feed pumps	4.81
44		Blowers (estimated)	10.00
45		Other auxiliaries	4.03
46		Aggregate, mean, of all auxiliary machinery	21.36
47	Speed per hour, knots		10.64
48	Slip of propeller (mean), per cent		8.7
49	Indicated thrust (main engines only), per square foot of developed area of propellers in pounds		915
50	I. H. P. per square foot of grate, based on total I. H. P.		12.1
51	Heating surface per I. H. P., based on total I. H. P.		2.67
52	Condensing surface per I. H. P., based on I. H. P. lines 40 and 43		1.21
53	Air pressure in inches of water		1½

Progressive trials of the Rodgers.

Speed.	I. H. P.
<i>Knots.</i>	
17.224	774.94
18.65	1,108.7
19.80	1,428.6
20.90	1,800.3
22.36	2,040.71
23.53	2,277
24.00	2,316
24.91	2,411.9

Very respectfully,

GEO. W. MELVILLE,
Engineer in Chief, U. S. N., Chief of Bureau.

The SECRETARY OF THE NAVY.

REPORT OF THE PAYMASTER-GENERAL OF THE NAVY.

CHIEF OF THE BUREAU OF SUPPLIES AND ACCOUNTS.

NAVY DEPARTMENT,
BUREAU OF SUPPLIES AND ACCOUNTS,
Washington, D. C., October 1, 1898.

SIR: I have the honor to submit the report of the Paymaster-General of the Navy for the fiscal year ending June 30, 1898, with estimates of appropriations for the coming fiscal year and tabulated statements, as follows:

- A.—General financial statement.
- B.—Statement showing receipts and expenditures of provisions, clothing, and small stores, and contingent, and balances on hand June 30, 1898.
- C.—Statement of expenditures of money and material at shore stations and objects to which applied.
- D.—Statement showing the cost of maintenance of navy-yards and stations.
- E.—Statement showing the value of real estate and chattels and machinery plant at the several navy-yards and stations June 30, 1898.
- F.—Statement of payments through the Paymaster-General's Office on contract, open-purchase, and open-contract vouchers.
- G.—Statement showing the value of supplies on hand July 1, 1897, the receipts from purchase and other sources, and the expenditures during the year, and the balance on hand June 30, 1898.
- H.—Statement of the value of stores received and expended on board ships in commission.
- I.—Statement showing the cost of maintaining ships in commission.
- K.—Statement of public sales of Government property.
- L.—Schedule of proposals received.

The outbreak of hostilities found the supply department of the Navy organized under a system that for more than eight years had been in process of thoughtful and painstaking development. Under it the strain of the war was easily met and sustained throughout with satisfactory results. The Bureau of Supplies and Accounts has, through the pay officers of the Navy, furnished ships, navy-yards and naval stations with pay, provisions, clothing, and all that was required to render and keep them ready for service, making all purchases for the Navy,

directing all shipments of supplies, and maintaining accounts covering the entire naval establishment. During the period of active operations 193 vessels were furnished and kept supplied with all necessary stores, embracing articles of every nature. Early in March the Bureau commenced making shipments to Key West, establishing there a base of supplies, where stores for 8,000 men for three months were constantly kept. Supplies for 4,000 men for three months were assembled and maintained at Mare Island, California; for 4,000 men for the same period at Norfolk, and for 9,000 men at New York.

With a probability of early hostilities, the commander-in-chief of the Asiatic fleet was directed early in April to fill his ships with supplies and to purchase a collier and supply ship. Within forty-eight hours thereafter the *Nanshan* and *Zafiro* were bought on the station and the latter loaded with provisions, so that when war was declared the Asiatic fleet was in possession of supplies for five months. Early in May the *City of Peking* was dispatched from San Francisco with three months' additional provisions for the fleet and a large consignment of miscellaneous stores.

On May 7th, one week from the day of her purchase, the refrigerating steamer *Supply* sailed for the fleet off Cuba, loaded with fresh meats, vegetables, fruit, ice, and other supplies. The *Celtic* was also purchased, and speedily sailed with 300,000 pounds of beef and mutton in cold storage, 300,000 pounds of fresh vegetables, 500 tons of ice, and a large general cargo.

Early in June steps were taken to provide the ships at Manila with fresh provisions. A refrigerating steamer was dispatched and reached Manila July 8 with 600,000 pounds of fresh meats, 600,000 pounds fresh vegetables, and other stores for the fleet under Admiral Dewey.

The refrigerating steamer *Glacier* was also purchased, fitted out in a similar manner as the *Celtic*, and dispatched to the ships off Cuba.

The transfer to the Navy of the revenue-cutter vessels, light-house tenders, and the Naval Militia, together with the large addition to the regular naval force by enlistments, resulted in a sudden and greatly increased demand for clothing, necessitating the manufacture within a very short period of over 1,000,000 garments. This prompt addition to the stock on hand enabled the Bureau to satisfactorily meet the demands of the service.

Notwithstanding the expedition necessarily employed in the procurement of supplies and in the manufacture of clothing, the usual standards were adhered to and careful inspections made. Contractors were held strictly to rigid specifications, with the result that the supplies delivered were the best of their kind. A comparison of prices paid during the war with those paid previous to it for articles procured under contract after public advertisement, as well as for those purchased in the open market, shows that they were in most cases no higher, and in many cases lower, than before the commencement of hostilities. The amount paid during the fiscal year for supplies purchased was \$11,422,640.65.

When the Bureau was informed that 1,720 Spanish prisoners from Admiral Cervera's fleet were to be quartered on Seaveys Island, in Portsmouth Harbor, and would arrive within two or three days, all necessary supplies were immediately assembled at that point, and Paymaster J. P. Loomis ordered by telegraph to proceed immediately to Portsmouth, N. H., for duty as commissary of the camp. When the prisoners arrived everything was in readiness, a wholesome dinner was served, and each man furnished with a mattress, hammock, two bla-

kets, and such clothing as he needed. The provisions furnished to the prisoners during their stay in the camp were the same in character and quantity as are ordinarily furnished to our own men.

Great labor has devolved on all the departments of the several yards, and especially upon the general storekeepers, in the fitting out in great haste of so large a number of ships with provisions, clothing, and general stores. From the navy-yard, New York, great quantities of supplies were also shipped to vessels and other stations. Nowhere have the benefits of the general storekeeper system been more clearly exhibited than at this yard, the chief receiving and distributing depot of the Navy.

The nature and scope of the duties devolving on the Bureau are best shown in the tabulated statements which accompany this report, covering as they do every transaction that has involved an expenditure of money under any appropriation made for the Navy.

The total credits under all naval appropriations, as shown by the books of the Bureau, amounted during the fiscal year to \$137,042,869.72. The total debits were \$58,743,929.37, leaving a balance on June 30 of \$78,298,940.35. There was drawn from the Treasury, through the Bureau, during the fiscal year 1898 \$57,888,662.61, an increase of \$23,876,108.40 over the amount drawn in the preceding year.

The cost of construction of new ships during the year, including material used, was \$7,041,051.13. The amount paid on account of vessels purchased was \$15,141,275.72, making a total expenditure for additions to the Navy of \$22,182,326.85.

The cost of repairs to ships at home was \$3,855,030.84, to those abroad \$34,638.76, and to equipage of ships \$34,224.37, making a total expenditure for repairs of \$3,923,893.97.

The cost of maintaining ships in commission, including pay and rations of officers and men, incidental expenses, material used, and repairs abroad, was \$11,063,393.82.

The expenditures on account of the Marine Corps were \$980,170.64.

The cost to the Navy of the Light-House Establishment was \$56,651.92; of the Coast and Geodetic Survey, \$162,917.11; of the Fish Commission, \$62,443.21.

The amount expended for arming and equipping the Naval Militia, exclusive of material loaned to the different States, was \$31,040.41.

The deposits by seamen under the "Pay of the Navy deposit fund," drawing interest at 4 per cent per annum, amounted, on June 30, 1898, to \$288,552.65. The deposits during the year amounted to \$174,216.43; the amount drawn out was \$181,264.69, and the interest paid was \$10,372.71.

The promptness and economy with which supplies were furnished in the rush incident to the war were due very largely to the naval supply fund, which enabled the carrying in stock of a large line of such articles as were in constant demand.

The fund has been in operation five years, having been established in 1893 as an experiment with \$200,000. Its practical utility was so thoroughly demonstrated that in 1896 \$300,000 additional were added, making the fund for that year \$500,000. Some of the other bureaus of the Department, recognizing its great convenience and usefulness, joined in a strong recommendation for its further increase, and \$1,000,000 more were added by the act of March 3, 1897, making the fund \$1,500,000.

During the past year the purchases under the fund have aggregated \$1,834,190.10. The balance remaining in the Treasury June 30 to the credit of the fund was \$731,356.67, the remainder of the fund being rep-

resented by unadjusted accounts for supplies issued for use and about \$590,000 in stock available for issue. The available balance, composed of the Treasury balance and unadjusted accounts, is fully obligated by outstanding contracts for supplies not delivered. The issues between April 1 and June 30 aggregated nearly \$400,000 and are now running from \$100,000 to \$150,000 per month. The entire available balance under the fund being obligated, in order not to create liabilities in excess of the fund, new purchases can be made only to an amount equaling issues of stores for use, thus limiting the scope and operation of the fund.

The claims made in the early history of the fund as to its advantages have been fully met, but its amount is still inadequate to enable the Bureau to carry as large and varied a stock of ordinary commercial articles as is necessary to promptly meet the demands of the growing Navy. All general supplies should be purchased under it, purchases being made in large quantities by contract after public advertisement, thus securing the widest possible competition and reducing to a minimum small emergency purchases in the open market. A further increase is recommended.

Improvements have been made in the various storehouses, particularly at the navy-yard, New York, in the more convenient and orderly arrangement of stores and the facilities for handling them. Labor-saving appliances have been introduced by means of which more expeditious and satisfactory work is made possible. Additional buildings are, however, greatly needed for the reception, survey, storage and preservation of outfits of ships going out of commission. All available space in the principal yards is now overcrowded, and unless additional storehouses are provided, not only will the supply department be greatly hampered but the prompt recommissioning of ships will be retarded and considerable loss will result from the impossibility of properly caring for Government property.

In my last annual report attention was invited to the desirability of a single appropriation available for the payment of charges for transportation of supplies, advertising for and telegraphing in regard to them, in place of thirteen different appropriations, as at present.

As was then stated, a shipment of stores from one navy-yard to another or to a vessel may, and often does, embrace supplies for several departments, and though they go at the same time and by the same line of transportation, it is necessary to prepare separate bills of lading in quadruplicate for each lot of stores, and vouchers in triplicate for the freight charges, under each appropriation concerned. In advertising for supplies the expense has to be prorated among different appropriations, which involves the preparation of an unnecessary number of vouchers with the attendant amount of clerical labor. One set of bills of lading and one set of vouchers should suffice.

The same condition exists with reference to telegraph bills, vouchers being prepared under each bureau appropriation and office of the Navy Department, when one voucher covering the entire monthly account of the telegraph company for the whole Department would answer every purpose.

Were a single appropriation available for expenses of the character indicated, the accounts of the Department would be greatly simplified and a mass of papers now necessary obviated, resulting in the saving of valuable time and an immense amount of clerical labor, not only at navy-yards and stations, but in the Navy and Treasury Departments.

I again recommend that the contingent appropriation of this Bureau

be so broadened in scope and increased in amount as to cover all contingent expenses of this character common to the several bureaus, excepting only such as are properly chargeable to "Increase of the Navy" and "Pay, miscellaneous."

The attention of the Department is once more invited to the act of Congress approved January 21, 1881, which reads as follows:

All advertising required by existing laws to be done in the District of Columbia by any of the Departments of the Government shall be given to one daily and one weekly newspaper of each of the two principal political parties, and to one daily and one weekly neutral newspaper.

Under this act whenever supplies for the Washington Navy-Yard, small or great in quantity, are advertised for, the advertisements must appear in six different newspapers in the District. I again recommend that Congress be asked to exempt supplies for the Washington Navy-Yard from the requirements of this law.

There were employed during the war 180 regular, retired, and volunteer pay officers. A number of the latter have been discharged and there are now on duty 134 officers, not including those recently detached from vessels put out of commission and in reserve, who are engaged in settling accounts. Of these, 87 are at sea, 6 on receiving ships, and 40 are employed at navy pay offices, as general storekeepers, paymasters of yards, etc. The number of pay officers on the active list allowed by law is 111. The additional officers at present on duty are officers on the retired list and acting pay officers appointed for temporary service. As soon as peace is established these will no longer be available. Officers are required immediately for three vessels about to be commissioned. Should the vessels now in reserve be called into active service, six additional officers will be required. The vessels nearing completion will also require officers. The possible establishment of new stations will be another demand. There should be a limited surplus to provide time for settling accounts and in proceeding to and from duty on distant stations. It will be impossible to meet the demand for pay officers unless the pay corps is increased. It must be understood that the duties performed by and under the direction of the Bureau of Supplies and Accounts, duties similar to those performed by officers of the pay, quartermaster, and commissary departments of the Army, together with the purchase and issue of stores for all other departments, are performed by the officers of the Pay Corps of the Navy, and I am of the opinion that it will, at no distant date, be necessary to increase the number to 160 officers, an addition of 49 to the number now allowed by law. I earnestly recommend that to meet immediate requirements an addition of 25 be now made, 10 to be added to the list of passed assistants and 15 to the list of assistants.

In closing this report I take pleasure in calling attention to the laborious work cheerfully and patriotically performed by the clerks in this Bureau, not only in regular office hours but long beyond them and often far into the night during the busy months of the war, and especially to the faithful and most efficient work of the chief clerk. The duties devolving on the chief clerk of this Bureau are of an exacting nature, requiring large business knowledge, a wide range of general information, good judgment, and great executive ability. He superintends a business involving accounts covering in the last year nearly \$140,000,000; his pay is \$1,800, that of a fourth-class clerk. I earnestly recommend that the pay of the chief clerk of the Bureau of Supplies and Accounts be raised to \$2,500.

The largely increased work of the Bureau incident to the war has

been accomplished with but slight temporary increase in clerical force, though it has been necessary for many of the clerks to work overtime. These conditions still prevail in order to keep the current work fully up to date. In view of the enlargement of the Navy, both in the number of men and vessels, it is obvious that the work of this Bureau must necessarily grow in proportion. It will never again be what it was before the war, and it can not be expected that the same clerical force will hereafter be able to meet the demands upon it without constant overtime and night work, which should not be continued indefinitely. Notwithstanding the fact that the work of the Bureau has been greatly enlarged in scope and volume in the past ten years, no increase in the clerical force has been provided for by Congress within that time. The necessity for a permanent increase is apparent and is earnestly recommended; the additional number and grades required to be indicated later.

Very respectfully,

EDWIN STEWART,
Paymaster-General, U. S. Navy.

Hon. JOHN D. LONG,
Secretary of the Navy.

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REPORT OF THE SURGEON-GENERAL, U. S. NAVY.

NAVY DEPARTMENT,
BUREAU OF MEDICINE AND SURGERY,
Washington, D. C., October 1, 1898.

SIR: In obedience to instructions contained in Department's letter of July 9, 1898, I have the honor to report the operations of this Bureau for the past year, accompanied by a set of annual estimates for the fiscal year ending June 30, 1900, and a statistical report showing the health of the Navy for the year 1897. The report embraces a statement of the condition of the naval hospital fund, the naval medical establishment, and other matters of interest pertaining to the duties of the Bureau of Medicine and Surgery.

The term of Surgeon-General Tryon expired on September 10, 1897. His good judgment and foresight in putting in order and equipping the several naval hospitals was of incalculable service to the Bureau, in enabling it to properly care for the sick or wounded of the Navy during the war.

Surg. J. C. Boyd, assistant to the Bureau, was acting chief of the Bureau from September 10 to October 1, 1897, and performed the duties of the office creditably and efficiently.

Medical Director Newton L. Bates was appointed Surgeon-General on October 1, 1897. He died on October 18, 1897, before he had an opportunity to take charge of the office he was so well qualified to fill.

The appointment of the present Surgeon-General dates from October 22, 1897.

In this report precedence is naturally given to the operations of the Bureau during the war with Spain. From the time of the blowing up of the *Maine* in the harbor of Havana on February 15, 1898, preparations were made by the Bureau providing for any possible contingency.

The naval hospitals were equipped to their full capacity; plans were prepared for building pavilion wards on the hospital grounds to give accommodation to any number of sick or wounded that the Bureau might be called upon to care for. The director of the naval laboratory prepared to furnish medical and surgical supplies in any quantity, at any place, and immediately. No additional expense was incurred until war seemed imminent; then the vessels that were likely to be engaged were supplied with a full outfit of supplies for war. In anticipation of a large number of additional vessels being taken for service, medical and surgical outfits of a kind suitable for the various classes of vessels were bought, assembled, and boxed, ready to be shipped anywhere as soon as called for. There has not been an instance during the war of any vessel having had to wait for her medical stores.

It was known that a corps of volunteer medical officers would be a necessity, and before war was declared or any law passed authorizing their employment medical boards of examination were established in Boston, New York, Philadelphia, Washington, Norfolk, and Mare Island (Cal.), to examine applicants for appointment, such appointment being contingent upon their services being required. As the result of their examinations a waiting list of well-educated medical men was ready, from which appointments were made as soon as their services were required after the declaration of war. Over 2,000 applications were received, but only a small proportion examined. Out of this number 42 were appointed assistant surgeons. They have rendered efficient service and have been a credit to the Navy. Some have had unusual and trying experiences, but they have accommodated themselves to their environments and have justified their appointments.

One of their number, Asst. Surg. John Blair Gibbs, was killed in action at Guantanamo while serving with the marine battalion. He was the only medical officer killed during the war.

In addition to the above appointments, 11 passed assistant and 8 assistant surgeons were mustered into the service with the naval reserves from the several States.

The question of proper care and transportation of sick or wounded at sea had long been a subject of consideration by the Bureau. The coming of war gave it an opportunity to demonstrate the wisdom of its propositions and the efficiency of its methods. By direction of the President, and by the authority of the Secretary of the Navy, the steamer *Creole*, of the Cromwell Line, between New York and New Orleans, was purchased, and designated as an ambulance ship. The vessel was sent to the yard of the Newport News Shipbuilding and Dry Dock Company, and there fitted out on the plans of the Bureau. The work was done under the Bureau of Construction and Repair, and under the immediate superintendence of Naval Constructor J. J. Woodward, to whom the Bureau is under lasting obligations for his advice, assistance, and his energy in satisfactorily completing the work. The merchant ship *Creole* became the ambulance ship *Solace* in sixteen days, fitted with a large and well-lighted operating room, in which were all the appliances for modern antiseptic surgery, a steam disinfecting apparatus, an ice machine, a steam laundry plant, cold storage rooms, and an elevator for taking patients from the operating room and upper deck to the wards below.

The *Solace* is fitted out under the requirements of the Geneva Convention, and flies the Geneva cross flag. She is the pioneer in her work, and indicates a step in advance that it well became the United States to take. Her fitting out was easy of accomplishment. The chief

of every bureau in the Department having to do with the vessel gave his cordial support and assistance to the work. They gave the *Solace* everything she needed. The vessel has been fortunate in her personnel. Commander Dunlap is an ideal commander, and the medical officers of the vessel, Surgeon Streets and Passed Assistant Surgeons Stokes, Smith, and Bogert, have shown themselves thoroughly competent and efficient in caring for the many sick or wounded who have been under their charge. Three hospital stewards, one of whom was a skilled embalmer, eight trained nurses, a cook, four messmen, and two laundrymen were especially designated for service in the Medical Department.

The *Solace* is built of steel; 3,801 tons; 375 feet long; 44 feet beam; draws 21 feet, and has a continuous speed of 16 knots. She can comfortably accommodate 200 patients, either in berths, swinging cots, or staterooms. The hurricane deck aft is inclosed with canvas for use as a contagious ward, if required. She carries 37,000 gallons of fresh water in tanks, and 800 tons in her double bottom. Distillers and evaporators keep up the supply.

As soon as the *Solace* received her stores she sailed for the blockading squadron and arrived in time to take on board the wounded at the bombardment of San Juan. She then collected the sick or wounded from the other vessels of the squadron and sailed for New York, where, on June 5, 57 patients were landed at the naval hospital.

On June 8 she sailed for Guantanamo, and was present to take on board the wounded marines in their fight with the Spanish troops.

As soon as the Spanish fleet was destroyed in the battle of July 3 she took on board the wounded from the *Brooklyn* and all the Spanish wounded, and gave them the care and attention that has never before been given to the wounded of friend or foe in any naval combat and that could only be given by an ambulance ship. As it was the policy of the Department to bring all the sick or wounded from Southern waters to Northern naval hospitals as soon as practicable, so that they might have a better chance for recovery, and there was still space left on the *Solace* for wounded men, she went to Siboney and took on board 44 Army wounded and sailed for Hampton Roads on July 12. On July 16 she landed 44 Army wounded at Fortress Monroe and 55 Navy sick or wounded and 48 Spanish wounded at the naval hospital, Norfolk. She then went to New York for coal, stores, and an additional ice plant, and sailed August 2 for Key West, where she took on board the sick from the hospitals and vessels in port, and then visited all the vessels on the blockade around Cuba, taking off their sick or wounded and leaving stores. After receiving at Guantanamo the sick brought by the *Gloucester* from the vessels around Porto Rico, she sailed for Boston, and on August 29 landed 74 sick from the Navy and 2 sick soldiers at the Chelsea Naval Hospital. She then coaled and went to New York for repairs and stores, and sailed September 22 for Guantanamo with orders to deliver stores and supplies to all vessels in Cuban or Porto Rican waters, take on board their sick, and then return to New York, bringing, in addition, as many sick or wounded of the Army as the vessel could accommodate.

On every trip of the *Solace* she has gone loaded with medical stores and supplies, and also with delicacies and comforts, which have been supplied in abundance for the sick or wounded by generous and patriotic individuals and societies from every part of the United States. Among the contributions to the *Solace* were a carbonator and deck awning from the Rhode Island Sanitary and Relief Association, an X-ray apparatus from the National Society of Colonial Dames, and

conveyance boxes for sterilized dressings from the Elizabeth (N. J.) members of the National Society of Colonial Dames.

In this war woman has done her perfect work, and the Medical Department of the Navy is profoundly grateful for the money contributed and supplies furnished for the aid and comfort of the sick or wounded of the Navy. Patriotic women have ably supplemented the efforts of the Government, and their assistance has been thoroughly appreciated.

The contributions soon became so numerous that it was necessary to have a medical officer detailed to receive them. Medical Director Bloodgood was assigned to the duty, and he has received and distributed the stores and attended to the voluminous correspondence with the same business ability he manifested when on the active list.

Four young women from the Johns Hopkins Medical School volunteered their services as nurses, and were assigned to duty at the naval hospital, Brooklyn, N. Y. Six women nurses from the registered list of the Daughters of the American Revolution and five Sisters of Charity at Norfolk also volunteered, and were assigned to duty at the naval hospital, Norfolk, Va. All of these women have done their work thoroughly and conscientiously.

The medical officers of the Naval Reserves, who were transferred to the service with the reserves from their States, rendered efficient service and willingly responded to every call made upon them.

The Bureau is under obligations to the Surgeon-General of the Army and to the Supervising Surgeon-General of the Marine-Hospital Service for caring for the sick or wounded of the Navy in the hospitals under their charge at Key West.

When the Department decided to remove the prisoners from the destroyed Spanish fleet at Santiago to Portsmouth, N. H., immediate preparation was necessary to care for the sick. Two pavilions were built, from plans already prepared, adjoining the naval hospital at Portsmouth. Telegraphic orders were issued for bedsteads, mattresses, bedding, stores, and supplies. Additional medical officers and nurses were sent, and when the vessels arrived with the prisoners the well men found comfortable barracks and the sick comfortable hospitals, to which they were immediately transferred. They were lodged, fed, and clothed as though they were expected guests. The Navy has reason to feel proud of this five days' work. One hundred equipped cots and six trained nurses were generously supplied by the Red Cross Society after the hospital was established.

On June 17 the President approved an act of Congress organizing a hospital corps of the Navy. The passage of this act is the culmination of the efforts of the Bureau for many years. It will give the service a trained corps of men who will now have some reason for remaining in service, having a hope of promotion and advancement as the result of faithful service, sobriety, and attention to duty. Its good results are already manifest; changes are being made as rapidly as practicable, and nearly all of the hospitals are now supplied with trained nurses, and in many of them are apprentices undergoing instruction. The examination for admission is rigid, and there will be more admissions to the corps when the end of the war releases from service many of the trained nurses now employed in other departments.

I can not close this portion of the Bureau's report without bearing testimony to the efficiency, skill, and devotion to duty of the personnel of the Medical Department. Not a word but of praise has the Bureau heard of any of them—regulars or volunteers. When war was imminent they vied one with another in their efforts to get on fighting ships.

Some have had greater opportunities than others, but all have done well the work assigned them. Surgeon Edgar saw his associate, Assistant-Surgeon Gibbs, shot by his side in the Spanish attack, and he continued his work alone, doing it thoroughly and well, as it was known he would.

The medical officers of the vessels in the fight at Manila and in the battle of the 3d of July shared the dangers of their comrades, and should participate in the praise accorded to them.

The medical officers of the *Solace* have the honor of inaugurating the first complete system of antiseptic surgery at sea. They have adapted means to ends, have improvised apparatus, have been fertile in expedients, and have the satisfaction of having demonstrated that with skill and intelligence the percentage of mortality among the patients on a well-equipped ambulance ship will be no greater than in the hospitals on shore.

Medical Inspector Persons found himself suddenly confronted with 226 Spanish sick or wounded prisoners in a hastily established hospital. He was equal to the emergency, and he and his associates were complimented by Admiral Cervera when he visited the camp.

The medical officers of the other hospitals have had sudden large accessions of patients. They were always ready and always cared for them well.

The director of the laboratory (our receiving and distributing depot of supplies) applied his well-known energy to the work, and never failed to have supplies ready whenever and wherever required. Those whose services have not been so conspicuous have done their duty in the stations assigned them, and have contributed their share toward the efficiency of the Medical Department of the Navy.

NAVAL HOSPITAL FUND.

The condition of this fund is as follows:

Balance on hand July 1, 1897.....	\$232, 482.20
Transferred to the credit since July 1, 1897	121, 876.84
Credit by appropriation for fiscal year 1898.....	20, 000.00
	<hr/>
	374, 359.04
Expended since July 1, 1897.....	188, 426.77
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Balance on hand June 30, 1898.....	185, 932.27

ESTIMATES.

Estimates have been submitted for two stenographers and typewriters, each at \$1,000. The two stenographers and typewriters are a necessity. There are none now on the regular roll of the Bureau. The work is being done by detailed men. It must be done by someone, and it should be done by the regular Bureau force.

Naval cemetery, United States naval hospital, Chelsea, Mass.—An estimate of \$2,500 is submitted for renovating the naval cemetery, United States naval hospital, Chelsea, Mass., for building fences to inclose cemetery, laying out approaches and paths, caring for graves, resetting headstones, and general renovation.

The cemetery at the naval hospital, Chelsea, has recently been relocated, and has never received the care and attention it should, in consequence of insufficient general appropriations.

Naval hospital, Chelsea, Mass.—An estimate of \$45,000 is submitted

for the repairs and renovation of the United States naval hospital, Chelsea, Mass., for building annex for kitchen, bathroom, closets and lavatories, furniture and fittings, and general renovation of hospital and appendages.

The amount asked for the improvement and renovation of the naval hospital, Chelsea, is urgently needed, and it is requested that it be made available immediately upon the approval of the act making appropriations for the naval service for the fiscal year ending June 30, 1900.

The kitchen is in the main building, on its dark side. The odors from it permeate the whole hospital. All of its furniture and fittings are old and worn out. The closets, lavatories, and bathrooms are in the center of the building, away from all direct light or ventilation. It is impossible to keep them in sanitary condition. They are a constant menace to the health of the patients.

GENERAL REPAIRS AT NAVAL HOSPITALS.

Naval hospital, Widows Island, Me.—No repairs have been made at this hospital during the past year. The Bureau would repeat its recommendation, contained in several previous reports, that the Department obtain Congressional action for the disposal of this property upon the most advantageous terms and at the earliest practicable time.

Naval hospital, Portsmouth, N. H.—During the year a substantial frame stable has been constructed. An ambulance of approved design, complete and modern in equipment, has been furnished this hospital, and which has added greatly to the facilities for the transportation of the sick and wounded officers and men of the Navy. The tubes of the hospital boilers have been renewed, the water tank in the attic of the hospital has been relined, and substantial repairs have been made to the roof of the hospital porch. The hospital sewer has been renewed, with increased facilities for flooding.

Naval hospital, Chelsea, Mass.—During the year many minor improvements and repairs have been made that add materially to the efficiency of this establishment. A steam disinfector of approved pattern has been installed and extensively employed. The bacteriological, chemical, and microscopical laboratory has been completed and fully equipped, and the hospital has been furnished with an outfit of modern surgical instruments. Repairs have been made to the water, steam, and electric plants, and changes have been made in the roofs of the ambulance shed and coal shed. The sills in the stable have been renewed, the foundation of the sea wall has been strengthened, and the protection of the foundations of the barn has been secured by an outer brick and cement wall. The substitution of a wrought-iron fence for the brick wall on Broadway, authorized by act of Congress, approved March 3, 1897, has been completed and presents a satisfactory appearance. The Bureau has submitted an estimate of \$45,000 for the complete rehabilitation of this hospital.

Naval hospital, Newport, R. I.—Considerable work has been done in connection with the grading of the hospital roads and caring for the grounds. A new fire main has been installed; the building has been painted, the main wards of the hospital thoroughly renovated, and minor repairs have been made to the sewerage system.

A detailed report of the hospital for contagious diseases, authorized by Congress and approved May 4, 1898, will be found among the "Special repairs at naval hospitals."

Naval hospital, New York, N. Y.—The extensive repairs and addi-

tions to this hospital, which have been referred to in the two previous reports, have been completed, affording not only ample accommodations for the increased demands of the service but offering every facility for the proper care and treatment of the sick. Extensive improvements have been made in connection with the roads and walks about the grounds, the main street having been paved. Considerable work has been done to the hospital roof, walls, and floors, and the water pipes have been extended and covered.

A more detailed description will be found under "Special repairs and improvements at naval hospitals."

Naval hospital, Philadelphia, Pa.—Important improvements have been made at this hospital by the putting in of two Keystone filters, which are connected with tanks in the attic.

Additions to the provisions against fire have been made, a fire plug similar to that used by the city fire department having been conveniently placed.

Extensive alterations have been made in the kitchen, the walls having been covered with vitreous tiling in the vicinity of the ranges, three new cooking ranges installed, and an improved hot-water boiler introduced.

Minor repairs have been made to engine house, laundry, and main building; also, an extensive system of electric bells installed and additions made to the bacteriological laboratory.

Naval hospital, Washington, D. C.—Other than supplying a heating outfit to the attic ward, utilized for the treatment of diphtheria cases, the repairs and improvements to this hospital have been unimportant.

Naval hospital, Norfolk, Va.—The accommodations have been greatly increased by the fitting up of the south wing with 90 new iron beds; 50 aseptic ward tables were also provided.

General repairs have been made to hospital building and considerable work done on the roads and grounds. Minor repairs and additions have been made to laundry, operating room, boilers, electric-lighting system, and hospital furniture.

Naval hospital, Pensacola, Fla.—No repairs have been made to this hospital during the past year, the only work, outside of that performed by the employees in caring for grounds and buildings, having been the installation of a telephone line from the navy-yard and the erection of lightning rods over the various buildings.

Naval hospital, Mare Island, Cal.—On the night of March 30, 1898, the hospital was so seriously damaged by an earthquake that a board ordered to examine into the condition of the building reported that the main portion of the hospital was unsafe and should be immediately abandoned, and recommended the construction of a new building, a description of which will be found in the special reports on repairs and improvements at naval hospitals.

Naval hospital, Yokohama, Japan.—Minor repairs have been made to the buildings during the past year, and unimportant additions made to the hospital furniture and outfit.

Naval hospital, Sitka, Alaska.—The condition of the building at this station, the third floor of which is utilized for hospital purposes, urgently demands the erection of a small hospital. The building was constructed in 1840 by the Russian Government for use as a sail loft, and later, as a fish house.

The lower floor is fitted up as a carpenter and blacksmith shop, and the smoke from the forge at times is so thick in the wards as to make the conditions almost unendurable for the patients under treatment. It

is built of logs and weatherboarded, and is now old and gradually rotting down, so that at times it sways back and forth with high winds and is in danger of collapsing.

The piles on which one-half of the building is placed are entirely rotten: in fact, they can be pulled to pieces by hand, causing that portion to have settled 22 inches in 24 feet.

The Bureau has recently directed that a survey be held upon the present building in order to determine its future disposition. Should the board recommend the construction of a small hospital, the building could be located upon a hill in the Government reservation back of the town site, where the sanitary conditions are excellent.

SPECIAL AND CONTEMPLATED IMPROVEMENTS AND REPAIRS AT NAVAL HOSPITALS.

Naval hospital, Portsmouth, N. H.—The Department having determined to transfer all Spanish prisoners of war of Admiral Cervera's fleet (captured in the battle of July 3, 1898, off Santiago, Cuba) to the navy-yard, Portsmouth, N. H., the Bureau, upon the receipt of official information to the above effect, directed the construction and equipment of two pavilion frame wards, with a combined capacity of 120 beds, for the accommodation of such prisoners as might require medical treatment.

Naval hospital, Newport, R. I. (hospital for contagious diseases).—The need of a detached building for the proper care, treatment, and isolation of contagious and epidemic diseases was recognized as peculiarly adapted to meet the requirements of this station soon after the main hospital building was completed.

The Naval Training Station, Newport, R. I., is the central rendezvous for the enlistment and training of all naval apprentices, who, on account of their age (14 to 18 years), are singularly susceptible to the influences of all diseases of a contagious or infectious nature.

Congress, in the act making appropriations for the naval service for the fiscal year ending June 30, 1899, made the following provision:

Hospital for contagious diseases: For hospital for contagious diseases at Newport, Rhode Island, six thousand five hundred dollars.

As soon as the appropriation became available, and in accordance with the authority contained in the above act, plans and specifications were prepared under the supervision of the Bureau; the work was advertised for June 10, 1898, and bids opened at 1 p. m., June 28, 1898. The following proposals were received, viz:

William F. Wilbur and F. E. Manchester, Newport, R. I.....	\$9,834
James M. Gillies, Newport, R. I.....	9,842

As all of the bids received were in excess of the amount appropriated by Congress for this purpose (\$6,500), no award was made. The Bureau, after making certain modifications in the plans and specifications of the proposed hospital building, again advertised for this work on July 13, 1898, and bids were opened at 1 p. m., July 26, 1898.

The following proposals were received, viz:

Charles C. Currier, Newton, Mass	\$8,700
Robert W. Curry, Newport, R. I	6,428
W. F. Wilbur and F. E. Manchester, Newport, R. I.....	6,398
Thomas Lonergan & Co., Chicago, Ill	5,950
Meads & Reynolds, Washington, D. C.....	5,800

The firm of Meads & Reynolds, being the lowest bidders, were awarded the contract on August 9, 1898.

The plans and specifications call for a one-story building, with a

capacity for 12 beds; the foundation, underpinning, piers, and area walls to be of stone; footing courses of concrete; superstructure of wood; porch piers of stone; and partition walls in basement of brick; roof of building to be covered with slate; roof of veranda and porch to be covered with tin.

The contractors have commenced work, and it is confidently believed that the building will be completed within three calendar months, the time specified in the contract.

Naval hospital, Brooklyn, N. Y.—The contracts for "Improvements and repairs" entered into by the Bureau with Isaac A. Walker & Son, dated October 17, 1896, for the rehabilitation of the old hospital building, and with P. J. Carlin & Co., dated December 14, 1896, "for the erection and completion of an additional building at the hospital," have both been completed during the year; the former on September 30, and the latter on November 20, 1897. Besides the above work, many improvements and repairs have been made to the outbuildings and grounds within the hospital inclosure.

In the main building changes and alterations in many of the rooms have been made—connecting some, dividing others, providing bath, basin, and closet for each officer patient, tiling corridors, passageways and vestibules of first story with 2½-inch white vitrified tile; new kitchen arranged and furnished; new floors of 2-inch yellow pine laid in upper corridor and in most of the rooms of first and second stories; beams projecting into hot-air flues in former mess hall in basement supported by iron columns sawed off, and sides of flues bricked up; replacing of old skylights above north and south corridor stairways; putting up two fire escapes; covering steam and water pipes in basement and tunnel; and the building has been wired for electric lights by the "steel armored conduit system."

The new "court building" of two stories and basement has been finished, connecting by corridors with main building, the basement containing two dining rooms for patients and employees, while the first story was designed especially for the purposes of a dispensary and chapel, and the second arranged for surgical work. The dispensary has been fitted up with new furniture, and the operating room with a perfect sterilizing plant for steam and dry sterilizing and all necessary movable furniture, and is well adapted for all possible requirements.

Elevator.—An Otis elevator, with electric engine and all other necessary electric appliances, has been installed. The car is 8 feet by 4 feet, giving sufficient room for a cot and two attendants, with a door at end and side sufficiently large for easy entrance and exit.

The contract requirement of an 1,800-pound load at a speed of 150 feet per minute was exceeded both as to weight and time.

New ward building.—This building is of buff brick, with Hallowell granite trimmings, 143 feet in length, and has a frontage of 51 feet 8 inches, containing a basement and two stories, the first and second stories being on a level with the same stories of the main building, with the first story of which it connects by a corridor. Each story contains a ward 46 by 85 by 15 feet, with bath room, lavatory, and closets, accommodating 44 patients, an office room and bath for a medical officer, and a bedroom and bath for a nurse. The attic, in which is situated a central ventilating chamber, contains an electric-motor fan and a steam heating coil.

The building is heated by steam, the radiators being placed in spaces under the windows, cased in by galvanized iron. Ventilation is by direct and indirect methods, air entering through grated frames outside under each radiator, rising to ceiling, and escaping through flues be-

tween windows. The point of entrance of air being near the floor, the natural flow of the current of air in the flues is assisted by aspirating coil and motor in the ventilating chamber, so that the flow will be about 7 feet per second, not sufficient to cause a draft, the air escaping through the ventilator at top of building. By this system the amount of air circulating through each ward, with doors and windows closed, amounts theoretically to about 164,000 cubic feet, warmed to the temperature of 80° F., enabling an increased number of patients to be placed in each ward if necessary. There are no rooms for officer patients, the building being designed for enlisted men only, and doubles the capacity of the hospital.

Electric wiring is by hidden steel conduit—two wires in one tube—system and fixtures uniform with those of kitchen and court building.

Corridors.—A corridor 162 feet long, 15 feet wide, and 15½ feet high affords communication between the new and the old wards and other buildings, leaving the new building in rear of first-floor ward, connecting with main building by a side corridor to the south wing, and terminating in the corridor connecting the kitchen with the court building.

Large windows on each side throughout length of corridor afford abundant light and the greatest amount of sun rays attainable from an eastern exposure, so that it may also be used as a solarium, the width being sufficient to allow plants, tables, chairs, etc., to be placed without obstructing passageways.

The wiring for electric lights is by the same system as the wards, with combined fixtures of the same kind, and heating is by long coils of sufficient radiating capacity estimated to keep the corridors at 70° F. in zero weather. The Bolles revolving sash, with which the corridor as well as the new building is supplied, will enable the windows to be so opened in the summer as to afford an unobstructed flow of air across the corridor.

Brick pavement.—The cobbles have been removed from the main roadway, and a pavement of hard-burned red Catskill brick has been laid on a 2-inch bed of sand from the main entrance gate to and including the side road on north side of hospital. It has received hard usage from the heavy wagons loaded with dirt for grading the paddock, but has stood the wear well, and gives promise of a smooth and enduring road.

Ornamental gate.—A large ornamental iron gate of similar pattern and improved construction to the one at the main entrance, and 4 feet wider, has been placed at the lower front entrance at Ryerson street, and from this point commences the macadam road.

Macadam road.—A new roadway has been laid out and partially completed under the direction of yards and docks. This roadway is 18 feet wide and has uncompleted gutters of hard-burned brick along a part of its course.

Grading by new boundary wall.—All the earth to the city grade has been removed on the city side of the new boundary wall, and on the inside, the embankment has been sloped to about 6 feet below the coping of the retaining wall.

A new tin roof has been put on the stable, and that on the medical director's residence has been repaired.

Grading of paddock.—About 2,500 loads of earth have been hauled into the paddock back of the stables, making it level and bringing up the grade to a point near the stable, with a slight descent toward the wall.

The trees in the grounds have been trimmed, a great deal of dead and dying material, including dead trees, has been removed, and a flag crossing laid on Flushing avenue opposite the entrance to the gate.

Naval hospital, Port Royal, S. C.—The naval appropriation bill for the fiscal year ending June 30, 1898, contained the following provision, viz:

Naval hospital, naval station, Port Royal, South Carolina: For hospital at the naval station at Port Royal, South Carolina, four thousand dollars.

In accordance with the foregoing act, plans and specifications for a hospital building were prepared by Civil Engineer George Mackay, U. S. N., attached to the naval station, Port Royal, S. C., and, after approval by the Bureau, the work was advertised for July 12, 1897, and bids were opened at 1 p. m. August 3, 1897.

The following proposals were received, viz:

R. R. Legare, Port Royal, S. C. (informal)	
D. Getaz & Co., Knoxville, Tenn.	\$5,978
Simons & Mayrant, 15 Broad street, Charleston, S. C.	4,575

The firm of Simons & Mayrant, 15 Broad street, Charleston, S. C., submitted the lowest bid. As their bid, however, was \$575 in excess of the amount appropriated by Congress for the proposed hospital, the Bureau was unable to award the contract for this work, Messrs. Simons & Mayrant having declined to scale their bid within the amount authorized by law.

As there did not appear to be the least probability that the proposed hospital could be built for the amount authorized by Congress, the Bureau determined (after an urgent appeal from the commandant of the station, who represented the great necessity for the construction of a hospital, in connection with the sudden and growing importance and expansion of the station as a rendezvous for our ships of war) to supply the station with two portable Ducker hospitals of 12 beds each, also, an additional one-story frame building to be used for the purposes of a laundry, kitchen, etc.

The Ducker hospitals and outbuilding have been erected, the work finished, and furnished completely, and the medical department of the station is now equipped and prepared to meet any reasonable demands that the exigencies of the service might require.

The Bureau regrets to state that a cyclone of great severity visited the naval station, Port Royal, S. C., on the 30th of August last, and on the morning of August 31 the two Ducker portable field hospitals were completely wrecked.

Plans and specifications have been prepared by the civil engineer of the Port Royal station for the erection of two frame pavilion wards measuring 16 feet 6 inches by 42 feet, with piazzas on all sides, and each with a capacity of 10 beds, to take the place of the Ducker hospitals recently destroyed.

The two buildings will be constructed as soon as practicable, and when completed will probably be ample for all the needs of the medical department on this station for many years to come.

Naval hospital, Mare Island, Cal.—The present hospital building having been seriously damaged by an earthquake, which occurred on the night of March 30, 1898, a board of naval officers was ordered the following day (March 31, 1898) by the commandant of the station to hold a strict and careful survey upon its condition, and to ascertain, after a careful examination and inspection of the premises, whether the building could be satisfactorily repaired. The board reported, as a result of their investigation, that the hospital was beyond repair, and recommended that a new building be constructed.

As soon as practicable after the receipt of this information the Bureau transmitted to the Department an estimate of \$100,000, with the recommendation that it be submitted to Congress, to be included in the naval appropriation bill for 1899, for tearing down and removing the present naval hospital building and appendages and erecting a new naval hospital at that place, and that the same be made immediately available upon the passage of the appropriation bill.

The Department forwarded the estimate with a favorable recommendation, and Congress, recognizing the importance and necessity for immediate action in this matter, embodied the following provision in the act making appropriations for the naval service for the fiscal year ending June 30, 1899:

For tearing down and removing present naval hospital building and appendages recently destroyed by earthquake at navy-yard, Mare Island, California, and erecting a new naval hospital and appendages at that place, to be immediately available, one hundred thousand dollars.

As soon as the appropriation became available, and in compliance with the Department's instructions, Mr. William M. Poindexter, an architect of this city, was authorized by the Bureau to prepare plans, specifications, and detail drawings for the new naval hospital building.

The work was advertised for on September 1, 1898, and bids for the same will be opened in this Bureau at 1 p. m., October 12, 1898.

The new hospital will be constructed on the foundation walls of the old building, so far as the old work will conform to the new conditions and requirements. The plans and specifications of the new building provide for a generous increase of area for the administrative departments of the hospital on the first and second stories, and for eight suites of rooms (each suite consisting of a parlor, bedroom, bathroom, and water-closet) for sick officers on the third floor. The rear extension of the hospital provides ample accommodations for the kitchen, offices, and mess halls on the first floor; etherizing, operating and recovery rooms, dispensary and chapel, on the second floor, and bedrooms for the use of attendants on the third floor.

The basement of the entire building will be used for no other purposes than for general storage, water-closets, and one large room for a men's smoking room.

In every department of the proposed building particular attention has been bestowed on all sanitary matters and appliances, and to the most approved methods of heating, ventilating, and electric wiring.

The four wards will accommodate 20 beds each, but in an emergency this capacity can be doubled. Under each bed is provided a ventilating duct, through which the foul air will be drawn from the wards by exhaust fans in the basement, and expelled through ventilating shafts. The hospital will also be provided with an electric elevator, to travel from the basement floor to the level of the second floor, a distance of about 27 feet, at the rate of 100 feet per minute, and with a capacity sufficient to lift a net load of 1,000 pounds. The car will be of wrought iron, and fitted up with electric-light fixtures and all necessary attachments.

The building is to be of wood frame construction, of a most substantial character, and the exterior and interior finish of California redwood.

The specifications provide that "The contractor shall begin work within ten days after receipt of notice from the Bureau of Medicine and Surgery that it is ready for him to enter upon the work, and he must prosecute the work so as to complete the contract in all respects in six calendar months from the expiration of the said ten days."

CEMETERIES AT NAVAL HOSPITALS.

The improvements authorized by Congress for the cemeteries at the naval hospitals, Brooklyn, N. Y., and Norfolk, Va., have been completed.

An estimate for \$2,500 has been submitted for renovating the cemetery at the United States naval hospital, Chelsea, Mass. This cemetery has recently been relocated, and has never received the care and attention necessary to place it in good condition, owing to the lack of sufficient general appropriations. It is earnestly requested that this estimate will meet with the approval of the Department.

NAVY-YARDS.

Navy-Yard, Portsmouth, N. H.—No contagious or epidemic disease has appeared during the year, and the general health of the station, as shown by the statistical report, has been excellent. This result has, however, depended in no small degree upon natural sanitary advantages, as the condition of the sewers has been unsatisfactory and has continued throughout the year to menace the health of the station.

Attention is also called to the deficient light supplied to the barracks, where, apparently, the pipes are too old and small to supply the burners. Eye-strain, resulting in injury to the eyes of the enlisted force on duty at the yard, would naturally follow present conditions.

Navy-yard, Boston, Mass.—The health of this yard during the past year has been satisfactory, the fourth quarter, in particular, showing an unusually small number of sick.

The diseases recorded during the year are confined to the ordinary casualties of the service, to venereal disease, and to simple disorders caused by climatic influences.

During the month of December three cases of parotitis epidemica were treated, contracted by exposure to the disease in Charlestown.

During the year an additional story has been placed on the marine barracks and the condition of the officers' quarters much improved. These additions have relieved the congestion in the dormitories, and add to the general sanitary efficiency of the barracks. The installation of electric lights has removed the objectionable factors of imperfect light and deterioration of atmosphere caused by the ordinary gas-burners formerly used.

Especial attention is called to the excellent condition of the military prison. The good effects of its efficient sanitation and thorough cleanliness, of its discipline, of the excellent food and employment in outdoor work, are shown in the good health and cheerful demeanor of its inmates.

Since the last report a desirable change has been made by the substitution of open ironwork in the lower tier of cells for the former solid woodwork.

The area of the prisoners' exercise yard has been largely increased. The plumbing and sanitary appliances of the officers' houses are in good condition.

Little improvement has been made in the sanitary arrangements—water-closets and drains of the shops—and should the yard again employ a large force, the accommodations would be inadequate.

Navy-Yard, League Island, Pa.—The health of the yard has been satisfactory, although it was feared that the turning up of the soil, in order to build dikes to retain the mud and water pumped from the basins under construction, would cause a material increase in the num-

ber of malarial cases. Such has not, however, proved to be the case, there having been only ten admissions during the year for malarial fever.

Two cases of typhoid fever occurred during the year, in one of which microscopical examination revealed the coexistence of malarial fever (tertian).

The water supply obtained from the artesian well recently completed is satisfactory.

By reason of the close proximity to the damp ground of the first floors of the buildings occupied by the officers and men of the relief marine guard, there were many complaints of rheumatic pains. The defect, however, has been remedied during the past year by raising the buildings and putting an additional story upon each house. Since this has been accomplished there has been no further complaint.

Navy-Yard, New York, N. Y.—The health of this yard has been exceptionally good, no infectious or contagious disease having made its appearance.

The following is a classification of the cases occurring among the workmen employed at the yard, in all of which preliminary treatment was given: Abrasio, 5; ambustio ex calore, 3; concussio, 2 (of which one case resulted in immediate death); contusio, 10; fractura, 1; stremma, 3; vulnus contusum, 40; vulnus laceratum, 40; vulnus punctum, 4; insolatio, 3.

There have been several trivial wounds inflicted by the careless handling of the new bayonet.

Navy-Yard, Washington, D. C.—As compared with the record of the preceding three years there has been a decided improvement in the health of this yard. This is attributable to favorable climatic influences, as there has been nothing done to improve the sanitary conditions.

The class of seaman gunners has been transferred to quarters where the best sanitary conditions possible at this yard prevail, with the result that the number of malarial cases among these men, which in 1896 amounted to 38 cases, only afforded 13 admissions and readmissions for 1897.

As stated in former reports, the prevalence of malaria at this station is attributable directly to the Anacostia flats, upon which the sewage of Washington, east of Fourteenth street, west, deposits itself, and from exposure to the sun's rays is responsible in great part for this condition.

Navy-yard, Norfolk, Va.—The health of the yard for the past year has been satisfactory, no serious cases of illness having occurred. Among the improvements that have been made on the station may be mentioned the dredging of the deposit along the water front, and its removal to the deep water of Hampton Roads; the extension of the stone quay, with a depth of 30 feet, preventing the accumulation of floating debris, which formerly encumbered the old wooden wharves, and the outlet sewers pass directly through the concrete walls, causing rapid removal of the sewage by the current.

A cistern for the collection of rain water, having a capacity of 860,000 gallons, has tended to better the health conditions, as the water from the driven wells is very unsatisfactory.

One hundred and two candidates for enlistment in the Marine Corps were accepted, and 39 rejected.

Navy-yard, Mare Island, Cal.—The health of this yard has been good, no illness of sufficient gravity to require special mention having occurred during the year.

Improvements have been made in the sanitary conditions, especially

as regards installation of modern water-closets and connections, the old cesspools and drains having been disinfected and filled up. A separate building for the medical department of the yard is a great desideratum, as the part of the equipment building allotted for use as medical storehouse and dispensary is inadequate and not well adapted for such purposes.

NAVAL STATIONS.

Naval training station, Newport, R. I.—The sanitary condition of this station during the past year has been good. A case of scarlet fever developed on the 18th of August and was followed by fifteen admissions for this disease, the epidemic continuing until the 6th of November.

At times during the year the accommodations for the apprentices have proven inadequate.

Naval station, New London, Conn.—The health of this station during the past year has been excellent, no disease of an epidemic or contagious nature having occurred.

There have been fewer cases of malarial fevers in this vicinity during the past year than previously, which is to be attributed to the fact that the water in the adjacent ponds has not been drawn off.

An abundant supply of good potable water has been obtained from a well sunk near the commandant's house.

Naval station, Annapolis, Md.—The health of this station has been excellent, there having been exceptional immunity from epidemic, climatic, and local morbid influences during the year.

A reconstruction of the buildings of the Naval Academy upon a comprehensive scheme and in accordance with modern sanitary principles is urgently demanded.

A modern aseptic surgical operating room, completed during the year, has proven a valuable addition to the equipment of the medical department of the station, and the new chemical and bacteriological laboratory is nearing completion.

The X-ray apparatus in the laboratory of the department of physics and chemistry has been utilized by the medical officers with most satisfactory results in surgical diagnosis.

Marine headquarters, Washington, D. C.—The health of the post during the year has been satisfactory. The proportion of malarial cases, which in 1895 amounted to nearly 50 per cent of the number of admissions, and in 1896 to about 33 per cent, only reached a proportion of approximately 20 per cent in 1897.

Naval station, Port Royal, S. C.—The health of the station has been excellent. A significant fact has been the reduction in the number of malarial cases, there having been only 1 admission for 1897 as against 9 during the year 1896; this is probably due to careful filtering, and the avoidance of the water of surface wells.

The station is dependent on rain water, and, owing to the insufficient capacity of the cisterns, it is at times necessary to obtain water from Port Royal, which is invariably contaminated with salt water as a result of the leaky condition of the lighters in which it is transported. Work is being continued on the artesian well, but there appears no immediate prospect of a supply from that source.

Naval station, Puget Sound, Washington.—With the exception of the occurrence of several cases of articular rheumatism the health of this station has been good.

RECEIVING SHIPS.

U. S. receiving ship Wabash.—The change in the system of drainage of Boston, whereby the sewage of Charlestown was diverted from the old conduit, having its exit abreast the bows of the ship, to the Metropolitan system of sewers, continues to have a beneficial influence upon the health of the ship.

The percentage of success from vaccination has proven the excellent quality of the virus furnished, reaching 25 per cent for the year, notwithstanding the fact that of those vaccinated more than one-half were reenlisted men.

During the past year 858 persons were examined. Of this number 513 were accepted and 345 rejected. There were 27 candidates rejected for color blindness.

U. S. receiving ship Vermont.—The sanitary condition of the ship has been most satisfactory during the year.

Of the 3,367 persons examined for enlistment during the year, 1,232 were rejected physically, 37 of this number being for color blindness.

U. S. receiving ship Richmond.—The leading improvement made during the past year was the construction of a roof and house over the upper deck, at present almost completed. This will provide a practically unobstructed deck, comfortably heated, and affording space for recreation.

The desirability of providing the ship with incandescent lights is emphasized since the erection of the roof, much of the light being cut off notwithstanding the numerous windows and skylights which have been provided.

The ventilation of the lower decks is greatly interfered with by the mosquito screens inclosing all the space below the spar deck, in addition to which individual mosquito nets are indispensable to the average individual from July to October.

The water in which the ship is moored is but little affected by the tides and currents, and as a result is foul smelling and unsightly. Mooring below the piers, with protection from the ice, would prove the remedy.

The roughness of the gun and berth decks is most objectionable when considered from the standpoint of influencing such infections as grip, pneumonia, tonsilitis, etc. Shellacking has been and is strongly recommended.

During the past year 363 recruits have been examined: accepted, 191; rejected, 172. Apprentices examined, 236—accepted, 103; rejected, 133. Total number of examinations for the year, 599.

U. S. receiving ship Franklin.—The sanitary and general condition of the ship for the year has been excellent.

Malarial diseases continue to form a large proportion of the admissions, 26 out of 93 cases being ascribed to this cause.

During the year 381 men were examined for enlistment, of which number 245 were accepted and 136 rejected; of the total number examined 180 were for first enlistment, with which class the percentage of rejection was 53.33.

U. S. receiving ship Independence.—There has been a steady increase in the number of malarial cases on board this ship, due in all probability to the difficulty of keeping the bilges in good sanitary condition on account of old, useless water tanks and decaying chain lockers encumbering the main hold. This could be remedied by removing everything

below the orlop decks and from the main hold, leaving an open and freely accessible space from stem to stern, which could be whitewashed, thereby doing away with a source of disease.

During the year 1,063 persons have been examined. Of this number 409 men and 147 apprentices were accepted and 211 men and 206 apprentices rejected.

NAVY PENSIONS.

The following statement embraces the work carried on under the pension division of the office during the fiscal year ending June 30, 1898.

There has been a considerable increase in the number of medical histories furnished the Pension Office, there having been answered 3,908 cases as against 2,696 for the previous year.

Notwithstanding the increase in the work and the additional labors incident to the exigencies of war, it has, with few exceptions, been the rule that pension calls have been answered on the same day as received. In furnishing information in connection with pension claims, it has been the aim of the Bureau to exercise the utmost promptness, maintaining at the same time accuracy and completeness of record as the first consideration.

Pension cases remaining on hand June 30, 1897.....	0
Received during fiscal year ending June 30, 1898.....	3,908
Answered during fiscal year ending June 30, 1898.....	3,908
Remaining on hand June 30, 1898.....	0
Cases for board of medical examiners received and answered.....	154
Cases for retiring board received and answered.....	32
Certificates of death received.....	417
Reports of medical survey received and acted upon.....	695
Cases from Judge-Advocate-General of the Navy received and answered.....	22
Cases from Civil Service Commission received and answered.....	12

MEDICAL ASSOCIATIONS.

International Conference of Hygiene and Sanitary Service on Railways and Shipboard—International Conference on Leprosy.—Surg. James D. Gatewood, U. S. N., represented the Medical Department of the Navy at the foregoing conferences, which convened at Brussels, Belgium, and at Berlin, Germany, respectively, during the year 1897. The purposes of the above conferences and the dates on which they convened were fully described in the Bureau's last report. Surgeon Gatewood's paper will be found among the special subjects embraced in the Bureau's report.

American Public Health Association.—The twenty-fifth annual meeting of the American Public Health Association was held at Philadelphia, Pa., October 26–29, 1897, and the Medical Department of the Navy was represented by Surg. D. O. Lewis, U. S. N. This association in its meeting at Ottawa, Canada, September 27–30, 1898, was represented by Medical Director T. C. Walton, U. S. N.

Ninth Congress of Hygiene and Demography.—The Spanish Government, having officially extended an invitation to this Government to send delegates to the Ninth Congress of Hygiene and Demography, to be held at Madrid from April 10–17, 1898, Medical Director J. R. Tryon, U. S. N., was appointed to represent the Medical Department of the Navy, and the Spanish minister was informed that Medical Director Tryon would present for discussion before the Congress a paper entitled "United States Museum of Hygiene, Washington, D. C.—Foundation, growth, advantages, and management."

Upon the adjournment of the Congress he was ordered to inspect and report upon the Museums of Hygiene of Paris and London.

His paper, which was read before the Congress, will be found among the special reports.

International Congress of Chemistry.—The Austro-Hungarian Government, through its minister at this capital, having requested that delegates be sent to the above Congress, to be held at Vienna from July 28 to August 2, 1898, Medical Director Flint, U. S. N., was selected to represent the Medical Department of the Navy.

International Congress of Hydrology, Climatology, and Geology.—Medical Director James M. Flint, U. S. N., was also ordered to represent the Medical Department of the Navy at the above Congress, which convened at Liege, Belgium, on the 25th of September, 1898, a request for delegates having been made officially by the Belgium Government through its minister at this capital. Medical Director Flint's papers on the proceedings of the two congresses will be published in a future report.

American Medical Association.—Owing to the need of the services of all medical officers, as a result of hostilities between this Government and Spain, the Medical Department of the Navy was unable to send delegates to attend the forty-ninth annual meeting of the above association, which convened at Denver, Colo., June 7-10, 1898.

Association of Military Surgeons of the United States.—The above association, which was to have convened at Kansas City, June 1-3, 1898, postponed its eighth annual meeting, owing to the fact that a large majority of its members were serving with the troops of the several States in the war between this country and Spain.

UNITED STATES NAVAL MUSEUM OF HYGIENE.

The medical director in charge of the Museum reports many changes and improvements at this establishment during the past year.

For the improvement of the water supply, which was pronounced insufficient by the city officials, a new 6-inch main was laid from the street, and two hydrants placed in positions designated by the chief of the fire department.

As a further protection against fire, the two fire plugs inside the building have been fitted with reducers, so that the regulation hose of the fire department can be attached to them; new hose, sufficient to reach any portion of the building, has been bought and is kept attached to the fire plugs at all times.

Owing to the elevation of the site on which the Museum building is located, the water pressure is insufficient for effective use in case of fire in the second story. It is hoped, however, that the new water supply to be furnished the city will remedy this defect.

Concrete pavement has been laid so as to extend along the whole front of the building, and the level of the gutters readjusted in order to allow proper drainage.

Many changes and repairs have been made in the internal arrangements of the building. Rooms have been fitted up and renovated thoroughly in connection with the chemical, bacteriological, and microscopical work of the Museum, and each of them supplied with all the instruments, appliances, and reagents that are deemed necessary for such investigations.

In the chemical department a large number of urinary and water analyses have been made; also, the determination of the specific gravities of iron and steel.

In the bacteriological department examinations have been conducted to test the efficiency of disinfectants, the quality of vaccine virus, and the potableness of waters, besides examinations of sputa for diagnostic purposes.

Photographs for exhibition at the Ninth Congress of Hygiene and Demography, held at Madrid, April 10-17, 1898, were prepared at the Museum, showing the character and extent of the hygienic exhibit, and an interior view of the rooms devoted to chemistry, bacteriology, and microscopy.

The room formerly occupied by the library was found to be too small to accommodate the books (amounting to nearly 12,000 volumes) belonging to the Museum, and a larger room was selected, the former being now used for the Museum exhibit.

OUTBREAK OF YELLOW FEVER AT KEY WEST, FLA.

Upon the commencement of hostilities between this country and Spain, the Navy Department ordered a flag officer in command of the naval station at Key West, Fla., and a short time afterwards designated it as a naval base for all vessels acting in southern waters.

In order to provide for all possible contingencies, and to meet the demands incident to a state of war that might be made upon it as a result of assembling in this harbor so large a number of war vessels, the Department landed at Key West a quantity of naval supplies, including ordnance stores, equipment materials, provisions, etc.

For the preservation of this property (valued at hundreds of thousands of dollars) it was deemed essential that suitable provision should be made for its protection. Early in June, therefore, 54 officers and men of the Marine Corps were transferred to Key West and located in a building well adapted for temporary quarters, and which had formerly been used as a cigar factory.

For several years previous to the present summer yellow fever, with the exception of an occasional sporadic case, had not made its appearance in Key West, but the location of the island, well within the limit of the yellow-fever zone, and the sudden concentration at this point of a large number of unacclimated persons belonging to the Army and Navy rendered it highly probable that, unless extra precautions were taken for the preservation of health, an outbreak of yellow fever could only be postponed for a short time.

The general unsatisfactory sanitary condition of Key West prevailing at this time, also, was such as to cause some uneasiness on the part of the Department, as it was but reasonable to infer that the exemption of the island from yellow fever for the past few years might be attributed to accident rather than to any special attention on the part of the officials to the enforcement of hygienic measures.

Although the duties devolving upon the marines were arduous and exacting, the health of the guard remained good until August 13, when the first suspicious case of illness among them made its appearance. On the morning of August 14 another marine was taken ill, and on the afternoon of August 15 three more cases were reported. The symptoms in all of the above cases were extremely suspicious, but before making a positive statement Assistant Surgeon Marcour decided to avail himself of the opinions of several yellow fever experts as to the diagnosis in the above cases. After a consultation between the local health officer of Key West and representatives from the Medical Corps of the Army, Navy, and Marine-Hospital Service, a definite conclusion

was reached as to the nature of the disease, and on August 16 the Bureau was informed officially of the existence of yellow fever, and that a rigid quarantine had been established at Key West by the national and local health authorities.

Upon the receipt of this information, the commandant in charge of the United States naval base was instructed by the Department to send at once all naval vessels in the harbor of Key West to Hampton Roads (including the officers and men on temporary shore duty, with the exception of the marine guard), and to transfer to some suitable vessel for passage north the sick and wounded of the Navy, who could be removed without danger from the Army general and marine hospitals. Orders were also issued that no naval supplies stored in the several buildings at Key West should be removed, as it was not deemed safe to transfer them at this time for fear of spreading the infection. The commandant was further directed to have the sick marines isolated within the barracks then occupied by them, to place all suspects or suspicious cases in an adjoining house rented for the purpose, and to remove the well marines to the detention camp, which was situated on the south beach at a distance of about 3 miles from the barracks. Every provision was made for the care and treatment of the sick, and every precaution adopted for the protection and preservation of the health of the marines in the detention camp.

Asst. Surg. R. F. Marcour (a yellow fever immune) had been selected by the Bureau to accompany the marines when ordered on this duty, in anticipation of a possible outbreak of yellow fever. Eight immune nurses, one immune cook, and one immune watchman were also employed. On August 18 the number of cases under treatment had increased to ten, and as there appeared to be at that time every probability that the disease would develop in an epidemic form, the Bureau decided to detail an additional medical officer for this duty.

Surg. John W. Ross (a yellow fever immune) was temporarily detached from the navy-yard, Pensacola, Fla., and on August 23 arrived at Key West and assumed charge of all yellow fever cases.

The prompt measures, however, adopted by the medical officers in the immediate and complete isolation of the sick, the thorough disinfection of the quarters occupied by them, and the removal of the well marines to a place beyond the danger point of infection, resulted in localizing the disease, and on September 12 Surgeon Ross reported the appearance of the last case—that of Commander Forsyth—making a total of fourteen patients under treatment. The disease prevailed in a mild form, and up to this time no deaths have occurred.

Upon the recommendation of Surgeon Ross, and with the approval of the Bureau, the Department ordered the transfer North of the marines, and on September 8 the guard left Key West on the steamship *Colorado*, and arrived in New York on September 14.

The *Colorado* was subjected to a thorough process of disinfection at the quarantine station, New York, and the bedding, mattresses, etc., of the marines were sent to the naval hospital, New York, where they were thoroughly disinfected before being placed in the barracks.

THE MEDICAL CORPS OF THE NAVY.

During the fiscal year ending June 30, 1898, the Department received 829 applications for information concerning the appointment of assistant surgeons in the Medical Corps of the Navy. During the same period permits to appear before the naval medical examining boards

for examination for admission into the Medical Corps of the Navy were issued to 248 candidates, as follows:

Alabama	1	Michigan	9
California	6	Minnesota	4
Canada	1	Mississippi	2
Connecticut	10	Missouri	10
Delaware	1	Montana	1
District of Columbia	5	Nebraska	1
Florida	2	New Hampshire	4
Georgia	3	New Jersey	7
Illinois	12	New York	47
Indiana	7	North Dakota	1
Iowa	3	North Carolina	5
Kansas	5	Ohio	6
Kentucky	3	Pennsylvania	31
Louisiana	1	South Carolina	1
Maine	4	Tennessee	4
Maryland	6	Vermont	3
Massachusetts	24	Virginia	16
Mexico	1	West Virginia	1

Of the above number, 65 candidates appeared before the examining boards, of which 17 were rejected physically, 19 rejected professionally, 12 withdrew from further examination, and 17 were found physically and professionally qualified for admission as assistant surgeons in the Medical Corps of the Navy.

The successful candidates were appointed from the following States, viz:

California	1	Minnesota	2
Connecticut	1	New Hampshire	1
District of Columbia	1	New York	3
Delaware	1	Pennsylvania	2
Missouri	1	Virginia	4

Percentage of candidates accepted	26.2
Rejected physically	26.1
Rejected professionally	29.2
Allowed to withdraw	18.5

Total percentage of candidates rejected 73.8

Upon the recommendation of the Bureau, and with the approval of the Department, Congress during the past session very wisely extended the age limit from 26 to 30 years for entrance into the Medical Corps of the Navy.

This legislation has been attended with most gratifying results, and for the first time in thirty-five years the number of officers in the Medical Corps of the Navy has reached the limit established by law.

Very respectfully,

W. K. VAN REYPEN,
Surgeon-General United States Navy.

The SECRETARY OF THE NAVY.

* * * * *

SPECIAL APPENDIX.

(Including statistical report of casualties occurring on the U. S. S. *Maine*; detailed account of casualties of the Spanish-American war, with disposition of cases; general view of health of Navy and Marine Corps during period of hostilities (April 21 to August 12, 1898), together with statistical tables relating to North Atlantic Squadron, Marine Battalion, and Asiatic Squadron.)

STATISTICAL REPORT.

CASUALTIES OCCURRING ON THE U. S. S. MAINE.

The U. S. S. *Maine* was destroyed in the harbor of Havana on the night of February 15, 1898, as the result of the explosion of a mine under the forward portion of the ship.

The complement at the time of the disaster was 355—290 sailors, 39 marines, and 26 officers. Of this number, 251 men and 2 officers were killed or drowned and only 102 saved. Seven of this number died subsequently of their injuries, making the number of survivors 94. This gives as the appalling percentage of loss practically 75 per cent of those on board. The greater proportion of deaths among the men than of the officers was due to the fact that the after portion of the ship, in which the latter were quartered, was comparatively uninjured. The completeness of the destruction of the forward compartments of the vessel is evidenced by the fact that of the bodies of the dead only 178 were recovered, 30 per cent of the number remaining in the wreck, notwithstanding the work of recovery was continued until April 6. This is attributed to the fact that the men were swinging in their hammocks over the part of the ship in which the force of the explosion was centered.

Of the 77 rescued sailors and marines, only 16 were uninjured.

The cause of death in the 7 cases reported from Havana was extensive burns covering greater portion of body in 6 of the number, and compound fractures of inferior maxilla and right femur in the seventh.

Of those injured and subsequently transferred to the United States marine hospital and army post hospital at Key West, Fla., 26 per cent were under treatment for wounds, 4 per cent for fractures, 6 per cent for dislocations, 30 per cent for contusions, and 34 per cent for burns. Notwithstanding the large number under treatment at these hospitals and the serious character of many of the injuries, there was not a single death.

One of the officers has since died of a cerebral affection attributed to the shock sustained at the time of the explosion.

Medical surveys have been held on 6 of the men who belonged to the *Maine*, and of this number 5 have been invalided from the service by reason of the following disabilities: 1, sprain of back; 2, chronic pleurisy; 3, neurasthenia and deformity of nasal bones; 4, deformity of right hand; 5, partial paralysis of muscles, right side of face; partial ankylosis, lower jaw; impaired hearing. All of these conditions were attributed to injuries received at time of the destruction of the *Maine*.

NAVAL CASUALTIES OF SPANISH-AMERICAN WAR.

(Covering period of hostilities—April 21 to August 12, 1898. Arranged in order of engagements and by vessels on which they occurred.)

BATTLE OF MANILA BAY, MAY 1, 1898.

U. S. S. BALTIMORE.

Case No. 1.—Lacerated wound of upper lip by fragment of rotating band. Also wounds of right foot, in one of which there was fracture of the fifth metatarsal bone extending into general synovial sac. Patient discharged to duty, entirely recovered, June 10. On the list forty days.

Case No. 2.—Lacerated wound (1½ inches long) just below sterno-clavicular joint. Healed by first intention. Discharged to duty May 7. On the list six days.

Case No. 3.—Compound fracture of left leg in upper third from a fall while carrying an 8-inch shell, the point entering the inner side of leg and splintering inner border of tibia. Discharged to duty, entirely recovered, June 7. On the list thirty-seven days.

Case No. 4.—Contusion and concussion. Was knocked down by the windage of a 4.7-inch shell. Face badly bruised, and unconscious for one-half hour. Discharged to duty May 7. On sick list six days.

Case No. 5.—Wound of left leg from splinter. Not admitted to sick list.

Case No. 6.—Wound of left forearm. Contusion of left sterno-mastoid and rupture of left tympanic membrane. Not admitted to sick list.

Case No. 7.—Wound of right foot and abrasion of face from splinters. Not admitted to sick list.

Case No. 8.—Contusion over sternum and abrasion side of face. Not admitted to sick list.

U. S. S. BOSTON.

Case No. 1.—Punctured wound of right cheek from flying splinter. Not admitted to sick list.

ENGAGEMENT OFF CIENFUEGOS, CUBA, MAY 11, 1898.

U. S. S. MARBLEHEAD.

Case No. 1.—Gunshot wound of head. The bullet entered at center of frontal bone and made its exit at upper margin of occipital bone, shattering the calvarium, the bones being freely movable under the scalp. Patient lived one hour after receipt of injury, but did not regain consciousness. The hemorrhage was very severe.

Case No. 2.—Gunshot wound of right thigh. The bullet entered at lower external third, splintering and comminuting the femur to such an extent that fragments of the bone were subsequently found embedded in anterior tibial muscles. Ball passed out opposite wound of entrance. Very little hemorrhage. Patient was transferred to the army barracks hospital, Key West, Fla., where, after consultation, it was decided that amputation was demanded. The operation was performed May 14, death ensuing very shortly after the operation. Number of days on sick list, three.

Case No. 3.—Gunshot wound of right leg caused by Mauser bullet.

The projectile passed through calf of right leg wounding external saphenous nerve. No injury to bone. Patient was transferred to *Solace*, thence to army general hospital, Key West. Patient was admitted to naval hospital, New York, June 5. Upon admission to hospital, wound had practically healed. There was numbness and loss of motion of toes due to nerve implication. Discharged to duty July 6. Number of days on sick list, fifty-six.

Case No. 4.—Gunshot wound of liver. The bullet passed through right lobe of liver, entering at lower border and making its exit about 2 inches external to the spinal column. The shock was very severe, but hemorrhage slight. Patient was transferred to army barracks hospital on May 14, where he remained to May 28. Was under treatment at army general hospital until June 1, when he was transferred by *Solace* to naval hospital, New York. Upon admission, wound was found to have healed. Abdominal bandage employed in order to relieve sensation of weakness complained of about hepatic region. Patient suffered at intervals from nervous and bilious attacks, and was invalided from the service July 25. Number of days on sick list, seventy-five.

Case No. 5.—Gunshot wound of right buttock. The projectile entered external surface of buttock, transversing gluteal muscles and making its exit about 1 inch from anus. Patient was under treatment at army general hospital, Key West, and was discharged to duty June 6. Number of days on sick list, twenty-six.

Case No. 6.—Gunshot wound, the bullet entering posterior border of left sterno-cleido mastoid muscle, passing through subcutaneous tissues, shattering lower jaw below angle, and making its exit through open mouth. Fragments of bone and seven of the teeth removed. Hemorrhage was very severe. Patient was under treatment at army barracks hospital, Key West, and on June 1 was transferred by *Solace* to naval hospital, New York. Upon admission there was found a sinus below and anterior to ear, leading to necrosed bone. There was considerable swelling along track of sinus, from which were removed at intervals fragments of teeth, bone, and metal. On September 9 an abscess formed in tissues of neck below angle of jaw, which was incised and an impacted tooth removed. Condition improved greatly after the operation, and on October 3 patient was transferred to naval hospital, Chelsea, where he continues under treatment (October 20) and is recorded as doing well. Number of days on sick list (October 20), one hundred and sixty-three.

Case No. 7.—Two gunshot wounds, one situated at back of right ankle and the other on outer side of right leg. Discharged to duty May 14. Number of days on sick list, three.

U. S. S. NASHVILLE.

Case No. 1.—Contused wound of left chest, above and to left of nipple, from impact of a deflected bullet. Absorption of effused blood occurred rapidly and patient was discharged to duty May 15. Number of days on sick list, four.

Case No. 2.—Gunshot wound of left hand, the bullet passing from ulnar side through the ring finger at junction of second and third phalanges, penetrating the joint. The dorsal surfaces of the middle and index fingers were lacerated. Patient made an excellent recovery except slight stiffness of wounded joint. Discharged to duty June 6. Number of days on sick list, twenty-six.

Case No. 3.—Superficial wound of skin of left side of neck. Discharged to duty May 12. Number of days on sick list, one.

Case No. 4.—Superficial wound of forehead from jacket of deflected bullet. Discharged to duty May 12. Number of days on sick list, one.

Case No. 5.—Gunshot wounds of head and left chest wall. The projectile causing the wound of head entered at left parietal eminence, coursing downward and backward, furrowing the skull for about 1½ inches. No evidence of cerebral involvement. Patient was semi-conscious, but gave evidence of shock. Later on it was decided that both tables of parietal bones were fractured, with apparently no injury to dura mater. On May 14 he was transferred to army barracks hospital, Key West, where an operation was performed, removing minute fragments of bone from wound. On June 6 he was admitted to naval hospital, New York, from the ambulance ship *Solace*. The wound of chest did not involve any of the ribs, the ball simply lacerating the tissues of left chest wall below axilla. A fragment of the cupro-nickel jacket was removed from this wound. Upon admission to naval hospital, New York, both wounds were found to be healed. Patient, however, was troubled with vertigo and obstinate headache. Discharged to duty September 22. Number of days on sick list, one hundred and thirty-four.

ENGAGEMENT OFF CARDENAS, MAY 11, 1898.

U. S. TORPEDO BOAT WINSLOW.

Case No. 1.—Lacerated wound right side of abdomen, with protrusion of intestines. Death instantaneous.

Case No. 2.—Lacerated wound of anterior cervical region, carrying away larynx. Death instantaneous.

Case No. 3.—Lacerated wound of abdomen, with protrusion of intestines. Death instantaneous.

Case No. 4.—Lacerated wounds of both thighs and of right side of abdomen below gall bladder. Died shortly afterwards, while being transferred in a boat to the *Hudson*.

Case No. 5.—Lacerated wounds of sacral region, upper anterior portion of left thigh, left lumbar region, over right scapula, of right heel and of left kneejoint, pulverizing bone. Death ensued shortly after reaching the *Hudson*.

Case No. 6.—Penetrating wound of left thigh, in Scarpa's triangle. Important blood vessels uninjured. Patient transferred to army general hospital, Key West, from which he was discharged to duty May 26. On sick list fifteen days.

Case No. 7.—Lacerated wound of right leg over anterior middle third. No injury to bone. Patient discharged to duty from army general hospital June 27. On sick list forty-eight days.

Case No. 8.—An abrasion of chest, evidently caused by spent fragment of shell. Discharged to duty May 12. On sick list one day.

All the casualties which resulted fatally were caused by the explosion of a small shell, probably a 10-pounder. The fragments into which the shell burst were not found in any instance in the wounds.

The hemorrhage from the various wounds was very slight, and there appeared to be but little suffering in those cases in which death did not ensue immediately. The bursting of the shell tore open a tank of green paint, with the result that not only was the deck in the immediate vicinity covered with paint, but two of the fatally wounded as well, and, owing to the fact of considerable heat having been imparted by the

shell fragments and hot deck, this proved a very embarrassing feature in caring for the wounded. This engagement gave a total of sixty-four sick days.

ACTION OFF SAN JUAN, PORTO RICO, MAY 12, 1898.

U. S. S. NEW YORK.

Case No. 1.—Lacerated wound caused by a small fragment of a shell which exploded on board. The missile entered behind angle of jaw, left side, penetrating neck and base of skull, traversing brain substance and fracturing occipital bone at right lateral angle. Heart continued to beat five minutes, but no respiratory sounds could be detected. Death ensued.

Case No. 2.—Lacerated wound caused by fragment of shell which exploded on board. Point of entrance opposite right internal malleolus, near the tendo Achilles, producing slight wound. Recovery uneventful, and patient discharged to duty May 20. Number of days on sick list, eight.

Case No. 3.—Lacerated wound caused by fragment of shell which struck patient in middle third of left leg, entering in front of fibula, lacerating the muscles and scoring spine of tibia. There also was a contused wound of right buttock from a splinter of wood. The tissues surrounding wound of leg apparently devitalized by heat of shell fragment, causing delay in healing. Recovery was uneventful except for œdema of foot from venous obstruction, and patient was discharged to duty June 27. Number of days on sick list, forty-six.

Case No. 4.—Severe contused wound of calf of left leg, caused by some missile, probably a fragment of shell. On May 13 there was considerable swelling of muscles of calf of leg. The recovery was slow, owing to devitalization of tissues. Patient discharged to duty June 4. Number of days on sick list, twenty-three.

Case No. 5.—Compound comminuted fracture, caused by fragment of shell, which entered left thigh 4 inches above patella, passing through quadriceps extensor, comminuting femur for 3 inches, and making its exit to left of popliteal space, 3 inches above joint. There was also a slight wound of calf of right leg. On May 13 wounds of entrance and exit enlarged and fragments of bone removed. The fracture was located 2 inches above inferior epiphysis, extending upward for 3 inches. Ends of femur sawed off and brought together by silver wire suture and limb put up in a fenestrated plaster-of-paris bandage. Transferred May 14 to *Solace*. The patient was admitted to the United States naval hospital, New York, on July 20, having been under treatment at army general hospital, Key West, for twenty-five days. At time of admission the left leg was in a plaster splint. Wounds healed rapidly. Motion in knee joint limited to about 30 degrees. Moderate exercise was productive of muscular soreness. Patient was invalided from the service on September 1. Number of days on sick list, one hundred and twelve.

U. S. S. IOWA.

Case No. 1.—Contused wound of upper angle of right scapula, from fragment of shell which exploded on board. Not serious. Discharged to duty May 21. Number of days on sick list, nine.

Case No. 2.—Lacerated wound of right side, posteriorly, in sixth intercostal space, extending down to the bone. Caused by a flying

splinter. Discharged to duty June 17, 1898. Number of days on sick list, thirty-six.

Case No. 3.—Compound comminuted fracture of right elbow joint, caused by a fragment of shell which exploded on board. Head of radius, olecranon, and outer condyle of humerus comminuted. Vessels and nerves intact. The ulna was fractured longitudinally for 2 inches from olecranon. Wound dressed aseptically and part immobilized. Patient was transferred to army general hospital, Key West, where the arm was amputated at junction of lower and middle thirds. On June 5 was admitted to naval hospital, New York, with a good stump. Invalided from the service July 27. Number of days on sick list, eighty-six.

ENGAGEMENTS AT GUANTANAMO, CUBA, MARINE BATTALION, NORTH ATLANTIC FLEET, JUNE 11 TO 20, 1898.

Case No. 1.—Gunshot wounds—one at level of fifth rib, the ball passing through chest from left to right side; the second projectile entering to left of umbilicus and making its exit just above crest of right ilium. Both wounds caused by small-caliber bullets and showed explosive effect. Death ensued.

Case No. 2.—Twenty-one wounds of head, neck, upper and lower extremities, from small-caliber bullets. Explosive effect marked. Death ensued.

Case No. 3.—Fifteen wounds of head, chest, and upper extremities, from small-caliber bullets. Explosive effect marked. Death ensued.

Case No. 4.—Gunshot wound of head from small-caliber bullet; wound of entrance at left temporal region, and that of exit directly opposite. Death ensued.

Case No. 5.—Gunshot wound from small-caliber bullet; point of entrance above eighth rib on left side in axillary line, projectile making its exit above sixth rib in axillary line of right side. Death ensued.

Case No. 6.—Fracture, with displacement, of cervical vertebræ from a fall from an embankment during one of the engagements. Death ensued.

Case No. 7.—Gunshot wound of right hand between first and second metacarpal bones, from premature discharge of his rifle (Lee-Metford). No injury to bones. Wound of entrance on palmar surface small; that of exit large. Injury received June 12. Transferred to ambulance ship, thence to naval hospital, Norfolk, and on July 21 to naval hospital, Philadelphia. Wound had healed entirely by August 26, the joints of thumb and index finger remaining stiff in spite of massage and passive movements. Invalided from the service October 10, 1898. Number of days on sick list, one hundred and twenty.

Case No. 8.—Gunshot wound from accidental discharge of his rifle (Lee-Metford). Entrance, palm of left hand; very large wound of exit, dorsum. Fourth metacarpal bone comminuted. Injury received June 12, 1898. Transferred to *Solace*, where wet antiseptic dressings were applied and part immobilized; thence to naval hospital, Norfolk, and on July 31 to naval hospital, Philadelphia. At time of admission to latter hospital wound had almost healed. By August 19 motion in first and second fingers normal, but that of third and fourth slightly impaired. He was discharged to duty in that condition, with the idea that enforced use would entirely restore function. Number of days on sick list, sixty-eight.

Case No. 9.—Gunshot wound of right arm; received June 13. *Manser*

bullet entered inner side at middle third and made its exit at point opposite. Injury to ulnar nerve, but none to bone. Transferred to *Solace*, thence to naval hospital, Norfolk, where he was admitted July 16, 1898. Discharged to duty July 21; wound entirely healed, but with some loss of sensation in little finger. Number of days on sick list, thirty-eight.

Case No. 10.—Wounded June 13. Mauser projectile entered one-half inch below right trochanter, making its exit at inner upper third of thigh and reentering upper third of left thigh. No injury to bone. Bullet was removed and patient transferred to *Solace*. Admitted to naval hospital, Norfolk, July 16, and discharged to duty, wounds having healed readily, August 15, 1898. Number of days on sick list, sixty-three.

Case No. 11.—Gunshot wound of right arm from Mauser bullet; received June 13. Wound of entrance on external surface $1\frac{1}{2}$ inches above right elbow; wound of exit very large ($2\frac{1}{2}$ inches in diameter) on anterior surface. External condyloid ridge of humerus injured. There was minute comminution of portion of bone struck, and soft tissues at wound of exit exhibited explosive effect of projectile. Patient transferred to *Solace*, thence to naval hospital, Norfolk, and on August 3 to naval hospital, New York. Upon admission the wound had practically healed, some ankylosis, however, remaining. Patient was surveyed September 7 and recommended to be retained for further hospital treatment. Continued under treatment. Number of days on sick list (October 20), one hundred and thirty.

Case No. 12.—Superficial wound over surface of left patella. Injury received June 13. Patient discharged to duty June 28. Number of days on sick list, fifteen.

Case No. 13.—Incised wound of calf of left leg. Injury received June 13. Patient discharged to duty June 18. Number of days on sick list, five.

Case No. 14.—Gunshot wound from accidental discharge of his rifle (Lee-Metford). Bullet entered $1\frac{1}{2}$ inches above right ankle, anteriorly, and made its exit below and posterior to external malleolus. No bone injury. Casualty occurred June 14. Transferred to *Solace*, thence to naval hospital, Norfolk. Upon admission, July 16, wound had healed. While in hospital patient developed syphilitic lesions, by reason of which he was discharged from the service September 2, 1898. Number of days on sick list with injury, thirty-two.

Case No. 15.—Wound of terminal phalanx of left thumb; caused by Mauser bullet. Injury received June 14. Amputation performed at phalangeal joint. Transferred to *Solace*, thence to naval hospital, Norfolk. Upon admission to hospital, July 16, wound had practically healed. Patient discharged to duty July 25, 1898. Number of days on sick list, forty-two.

Case No. 16.—Gunshot wound of right hand from accidental discharge of his rifle (Lee-Metford). Injury received June 16. There was extensive comminution of proximal phalanges of index and middle fingers, necessitating amputation. Transferred to *Solace*, thence to naval hospital, Norfolk. Discharged to duty with satisfactory stumps August 12, 1898. Number of days on sick list, fifty-seven.

Case No. 17.—Gunshot wound of lower third of left forearm, with extensive comminution of radius and ulna, caused by premature discharge of his own rifle. Injury received June 16. The scaphoid and semilunar bones minutely comminuted. Transferred to *Solace*, where resection of radius, scaphoid, and semilunar bones was performed.

Patient was admitted to naval hospital, Norfolk, July 16, and transferred to naval hospital, Philadelphia, July 30. At this time wound was doing well and had healed entirely by September 24. Motion of wrist, however, was considerably impaired, particularly in flexion and extension. On October 6 but little motion of wrist and fingers and some atrophy of muscles in consequence. Massage and passive motion kept up. Patient remains in hospital. Number of days on sick list to October 20, 1898, one hundred and twenty-seven.

Case No. 18.—Gunshot wound of left hand from premature discharge of his rifle (Lee-Metford). Injury received June 16. Wound of entrance palmar surface, the ball passing through hand, shattering second and third metacarpal bones, and making its exit on the dorsal surface, causing an extensive wound of exit. Transferred to *Solace*, where the comminuted metacarpal bones were resected and part immobilized. Admitted to naval hospital, Norfolk, July 16. The wound was slow in healing, and the final result was thickening of the tissues of palm and stiffness of first three fingers. Discharged from the service September 16, 1898. Number of days on the sick list, ninety-two.

Case No. 19.—Wound of left foot from accidental discharge of his rifle (Lee-Metford), received June 16. Ball entered between heel and internal malleolus, making its exit in middle plantar surface. No injury to bone. Transferred to *Solace*, thence to naval hospital, Norfolk. Patient was admitted to naval hospital, Philadelphia, August 2, at which time wound had practically healed. He was discharged to duty August 30. Number of days on sick list, seventy-five.

Case No. 20.—Gunshot wound of left foot from accidental discharge of his own rifle (Lee-Metford), received June 20. Bullet passed through fourth toe, comminuting phalanges, also producing a lacerated wound of fifth toe. Transferred to *Solace*, where fourth toe was amputated. Admitted to naval hospital, Norfolk, July 16, and discharged to duty in excellent condition August 8. Number of days on sick list, forty-five.

Case No. 21.—Gunshot wound of left forearm from accidental discharge of a comrade's rifle, received June 20. Bullet entered at anterior surface, completely comminuting the radius for 3 inches in its middle third; ulna fractured at junction of middle and lower third; muscles extensively lacerated; vessels intact. Transferred to *Solace*, where the radius was resected and ulna sutured. Aseptic dressing applied and part immobilized. Admitted to naval hospital, Norfolk, July 16, and transferred August 1 to naval hospital, Philadelphia, where he is still under treatment. The wounds of entrance and exit have healed, with exception of slight crust on latter. Fibrous union has resulted, with impaired motion of hand and fingers; pronation and supination being lost. A skiograph, taken October 13, indicates that resection of both bones will be necessary. Patient remains in hospital. Number of days on sick list to October 20, one hundred and twenty-three.

Case No. 22.—Gunshot wound of last phalanx of left great toe from accidental discharge of his own rifle (Lee-Metford). Patient discharged to duty. Number of days on sick list, fifteen.

ENGAGEMENT OFF SANTIAGO, JUNE 22, 1898.

U. S. S. INDIANA.

Case No. 1.—Gunshot wound of right leg from accidental discharge of a revolver. Ball entered calf of leg in the middle and to inner side,

taking its course upward and outward for $3\frac{1}{2}$ inches. Wound dressed aseptically, and patient discharged to duty well July 2. Number of days on sick list, ten.

U. S. S. TEXAS.

Case No. 1.—Lacerated wounds from explosion of a 6-inch shell. The body was mangled and partly dismembered. Death was instantaneous.

Case No. 2.—Lacerated wound in front of right ear from fragment of shell. Wound dressed and patient discharged to duty same day. Number of days on sick list, one.

Case No. 3.—Lacerated wound of left forearm and contusion of left popliteal space from fragments of shell. The wound of forearm involved only soft parts. Upon exploration no fragments of shell could be found. Discharged to duty July 3. Number of days on sick list, nine.

Case No. 4.—Lacerated wound of right great toe. Fragment of shell removed from wound and aseptic dressing applied. Discharged to duty June 22, 1898. Number of days on sick list, one.

Case No. 5.—Contused wound behind right ear from fragment of shell. Not serious. Discharged to duty June 22. Number of days on sick list, one.

Case No. 6.—Lacerated wounds of right thigh and left leg from fragments of shell. Careful exploration failed to reveal any of the fragments in the wounds. Gauze drainage was employed and aseptic dressings applied. Patient was transferred to *Solace*, thence to naval hospital, Norfolk, where he was admitted July 16 and discharged to duty July 23. Number of days on sick list, thirty-one.

Case No. 7.—Flesh wound about $2\frac{1}{2}$ inches in length, extending down to great trochanter of left femur. Patient transferred to *Solace*, thence to naval hospital, Norfolk, where he was admitted July 16. The wound healed perfectly, and he was discharged to duty August 29 in excellent condition. Number of days on sick list, sixty-eight.

Case No. 8.—Burns of forehead, eyelids, right ear, nose, lips, left hand, and right wrist from powder flash of bursting shell. Injuries superficial and shock very slight. Patient transferred to *Solace*, thence to naval hospital, Norfolk, where he was admitted July 16 and discharged to duty July 22. This man was assigned to duty on the U. S. S. *Cesar*, where he was surveyed July 31 for persistent headache resulting from the concussion of the exploding shell on June 22. A second survey was held September 1, and in accordance therewith he was invalided from the service by reason of chronic inflammation of right ear and persistent headache. Number of days on sick list for burns, thirty.

Case No. 9.—Seventeen lacerated wounds from shell fragments; principal injuries located as follows: One of right thigh, $3\frac{1}{2}$ inches in length, below groin, extending deeply into outer muscles; one near insertion of patellar ligament, lacerating and bruising soft tissues to outer side of left tibia; one $2\frac{1}{2}$ inches above left ankle down to the tendons; one of left eyelid, the iris being torn and hæmorrhage into ocular humours caused, although no external wound of eyeball produced; several trivial wounds of wrists and feet. Patient was transferred to *Solace*, thence to naval hospital, Norfolk, and later on to naval hospital, Philadelphia, where he was admitted on August 3. On admission the wounds below left knee and outer side of thigh were found unhealed and the outer

quadrant of left iris detached. On September 1 wounds were recorded as healed. September 17 the detached portion of iris fixed by adhesions and the lens becoming cloudy. The cloudiness of the lens has progressed and vision has steadily failed. Patient surveyed October 10, and recommended to be invalided from the service. Number of days on sick list, one hundred and ten.

ENGAGEMENT OFF SANTIAGO, JULY 3, 1898.

U. S. S. BROOKLYN.

Case No. 1.—A chief yeoman, while determining range of the enemy on the open deck with stadimeter, had his head blown off by a large shell, only the base of the skull remaining. Death instantaneous.

Case No. 2.—Lacerated wound of right thigh; two fragments of shell entering on inner surface, passing behind the femur and making their exit externally at junction of middle and lower third of thigh. There were also superficial wounds of both legs. Aseptic dressings applied, and patient transferred to *Solace*, thence to naval hospital, Norfolk, where he was admitted July 16. Wounds healed, and on August 29 he was discharged to duty. Number of days on sick list, fifty-seven.

Case No. 3.—Rupture of right tympanic membrane from blast of an 8-inch gun. Marked inflammation of membrane, which later on subsided, the hearing having been diminished one-half. Was not admitted to sick list.

Case No. 4.—Superficial lacerated wound of left iliac region from fragment of shell. Not admitted to sick list.

Case No. 5.—Rupture of left tympanic membrane, resulting in otitis media. Not admitted to sick list at time of action, but was subsequently treated from August 6 to August 8. Number of days on sick list, two.

Case No. 6.—Rupture of tympanic membrane from blast of great gun. Not admitted to sick list at time of engagement, but was under treatment from July 28 to August 3 for resulting otitis media. Number of days on sick list, six.

Case No. 7.—Rupture of tympanic membrane from blast of 8-inch gun. Patient did not report for five days after injury, at which time there was resulting otitis media and destruction of membrane.

U. S. S. TEXAS.

Case No. 1.—Fracture of right fibula, as result of blast of great gun throwing him from gun deck to handling room through ammunition hoist. Patient transferred to naval hospital, New York, August 6, and discharged to duty September 7. Number of days on sick list, sixty-five.

Case No. 2.—Rupture of left tympanic membrane from blast of great gun. Discharge to duty same day. Number of days on sick list, one.

Case No. 3.—Rupture of left tympanic membrane and contusion of left great toe. Not admitted to sick list.

Case No. 4.—Conjunctivitis, resulting from powder burn during engagement. Discharged to duty July 5. Number of days on sick list, two.

MISCELLANEOUS ENGAGEMENTS.

U. S. S. YANKEE.

Case No. 1.—Lacerated wounds of left shoulder, caused by fragment of shell. The outer one-fifth of clavicle, the greater portion of head of humerus and inner one-third of spine of scapula carried away. Injury received June 13. There was a triangular wound over tip of left shoulder, occupying position of middle fibers of deltoid, and a ragged one over free portion of spine of scapula, communicating with the joint. Small fragments of comminuted bone filled both wound cavities, which were connected by a free incision. After removing all particles of bone and rounding off the head of the humerus with bone forceps the wound was closed and dressed aseptically. Patient was transferred to *Solace*, and thence to naval hospital, Norfolk, where he was admitted July 16. The wound healed, leaving a stiff shoulder joint, and September 24 he was invalided from the service. Number of days on sick list, one hundred and three.

U. S. S. BANCROFT.

Case No. 1.—Gunshot wound received in engagement at Cortes Bay, Cuba, on the 2d of August. The projectile entered at level of third rib on the right side just external to sternum, fracturing the rib and evidently wounding the aorta, from the very great loss of blood. Death was instantaneous.

U. S. S. AMPHITRITE.

Case No. 1.—Gunshot wound of left thigh, received August 7, from bullet discharged accidentally from a revolver at a distance of 10 feet. The projectile entered the left testicle, and, continuing its course, entered the left thigh, wounding the femoral artery and vein, and embedding itself in the capsule of the hip joint. Shock was profound, and operation was delayed until patient should have rallied sufficiently to undergo the same. Traumatic gangrene having set in, amputation was deemed imperative, in spite of constitutional contraindications. The operation (performed on August 10), which lasted one hour and was attended with little loss of blood, was followed by death about three hours later. Number of days on sick list, three.

U. S. S. EAGLE.

Case No. 1.—Incised wound of left foot, received on July 12, while engaged in destroying a captured steamer. Wound extended from internal malleolus to tip of calcaneum, severing posterior tibial artery and tendo achilles. Artery ligated and tendon sutured. Patient discharged to army general hospital on July 21, at which time the wound was healing satisfactorily. The case was discharged to duty August 5. Number of days on sick list, twenty-four.

Summary of casualty report.

	Number of casualties.	Killed.	Wounded.	Died subsequently as result of wounds.	Discharged to duty.	Invalided from service.	Continued under treatment.	Total sick days for each engagement.
Action of Manila Bay (May 1).....	9		9		9			81
Action off Cienfuegos (May 11).....	12	1	11	1	8	1	1	422
Action off Cardenas (May 11).....	8	5	3		3			64
Action off San Juan, Porto Rico (May 12).....	8	1	7		5	2		239
Engagements at Guantanamo, Cuba (June 11 to 20).....	22	6	16		11	2	3	1,651
Engagement off Santiago (June 24).....	10	1	9		7	2		221
Engagement off Santiago (July 3).....	11	1	10		10			123
Miscellaneous:								
Yankee (June 18).....	1		1			1		108
Eagle (July 12).....	1		1		1			24
Bancroft (August 2).....	1	1						
Amphitrite (August 7).....	1		1	1				3
Total.....	84	15	68	2	54	8	4	2,339

STATISTICAL REPORT OF THE HEALTH OF THE NAVY AND MARINE CORPS DURING THE PERIOD OF HOSTILITIES APRIL 21 TO AUGUST 12, 1898, INCLUSIVE.

The average strength of the Navy and Marine Corps for the 114 days of hostilities (April 21 to August 12, inclusive) was 26,102.

The total number of deaths occurring during this period was 85, of which 29 were from injuries and 56 from diseases, being at the rate of 10.40 per 1,000 per year. (Table VI.)

There were 18 persons killed in battle or died subsequently of their wounds. The number of deaths from all causes, exclusive of those killed in battle, was 67, being at the rate of 8.19 per 1,000 per year.

NORTH ATLANTIC STATION.

In the returns from the squadron operating in Cuban waters are represented 48 vessels, with an average complement of 11,599. This force furnished a total number of sick days of 19,670, affording a daily average of patients of 182.

There were 2,800 admissions for disease and 701 for injuries. The average number of days' treatment per case for injuries was 5.81, and that for diseases 5.55.

As showing the effects of war service upon the crews of the various types of ships, the monitors gave an average ratio per 1,000 of force sick daily during the war of 17.48; for 1897, 10.87; battle ships, 12.34, against 12.38 in 1897; cruisers, 17.01, as against 17.31 for 1897; gunboats, 15.74, as against 20.14 for 1897.

As regards heat prostration on the various types of vessels, the monitors furnished 20 cases, with 38 sick days, a rate of 25.80 per 1,000 for cases and 49.03 for sick days; the battle ships, 71 cases, with 210 sick days, a rate per 1,000 of 27.36 for cases and 80.92 for sick days; the cruisers gave 42 cases and 135 sick days, a rate of 12.75 per 1,000 for cases and 41 per 1,000 for sick days; the gunboats furnished 17 cases and 54 sick days, the rate per 1,000 being 8.90 and 28.28, respectively.

Of the diseases especially incident to operations in a tropical climate, there were 226 cases of malarial diseases, giving a total number of sick days of 1,105. There were 18 cases of dysentery, with 107 sick days. One hundred and eighty-one cases of heat stroke were under treatment for 629 days. Diarrhoeal affections furnished 292 admissions and 1,120 sick days.

There were 310 admissions for injuries, with 4,120 sick days.

Of the 3,501 admissions only 12 were for typhoid fever.

ASIATIC STATION.

The health of the squadron operating in Asiatic waters during that period of the war extending from April 21 to June 30, inclusive, varied but little from that for 1897, the ratio per 1,000 of force sick daily being less on the *Olympia* for this period than for 1897, and slightly in excess as regards the other vessels of the squadron.

Of those affections peculiarly incident to war operations in a tropical country, there occurred 44 cases of malarial diseases, total sick days 343; 20 of heat stroke, total sick days 73; 38 of diarrhoeal affections, sick days 118; and 3 cases of dysentery, with 21 sick days.

There were 52 admissions for injuries, with 399 sick days.

One death occurred on the *Boston* from acute dysentery.

During the progress of the battle of Manila Bay there were 6 cases of heat stroke, distributed among the vessels of the fleet as follows: *Baltimore*, 1; *Boston*, 2; *Concord*, 1; *Raleigh*, 2. These 6 cases gave a total of 7 sick days.

MARINE BATTALION, NORTH ATLANTIC FLEET.

The average strength of the marine battalion April 21 to August 12, inclusive, was 588—21 officers and 567 men.

During the period of hostilities this force served 36 days on board a transport, being at sea about 10 days of the time. On June 10 a landing was made at Guantanamo, Cuba, where the battalion was in camp for the remainder of the war.

The daily average of patients was 18.14, and the rate per 1,000 of force sick daily 22.34.

There were 6 deaths, all of which occurred in the engagements with the Spanish troops, not a single fatal case occurring from disease.

Of general infectious diseases, there were 7 cases of dysentery, 19 of malarial diseases, 3 of pneumonia, and 12 of measles.

During the entire period of hostilities there was not a case of typhoid fever.

An interesting fact in connection with the health record of this force is that for the 39 days intervening between the signing of the protocol and the disbanding of the battalion there were only 14 admissions to the sick list, with a total of 115 sick days, affording as the daily average of patients 2.94, and the ratio per 1,000 of force sick daily 5.

None of these cases were invalided to hospital or from service, all having been discharged to duty.

STATISTICAL TABLES.

The following statistical tables give in detail the data obtained from the reports of patients treated on board those vessels of the Navy

actively engaged in the operations of war, and thereby subjected to conditions calculated to have an unfavorable effect upon the health of the persons serving thereon.

In several minor instances these returns have not yet been received, and as a consequence the facts as to admissions and dispositions refer only to those vessels included in Tables I and III; but Table VI embraces *all* deaths occurring in the Navy and Marine Corps during the entire period of hostilities.

The information relating to the health statistics of the ships of the Asiatic Station is derived from reports covering the period April 21 to June 30, inclusive, the returns of the last forty-three days of the war not having been received as yet.

I. North Atlantic Station: Names of vessels, periods of war service, average complements, admissions for disease and injury, sick days, daily average of patients for war and 1897, ratio per 1,000 of force sick daily for war and 1897, and disposition of cases.

II. North Atlantic Station: Detailed statement.

III. Asiatic Station: Names of vessels, period of war service, average complements, admissions for disease and injury, sick days, daily average of patients for war and 1897, ratio per 1,000 of force sick daily for war and 1897, and disposition of cases.

IV. Asiatic Station: Detailed statement.

V. Detailed statement of health of Marine Battalion, North Atlantic fleet.

VI. Mortuary record, embracing all deaths occurring in the Navy and Marine Corps during period of hostilities, giving causes of death and places of occurrence.

TABLE I.—*North Atlantic Station.—Period of service, average complements, admissions for disease and injury, sick days, daily average of patients, discharges to duty, transfers to hospital, discharges from the service, cases continued subsequent to August 12, and deaths on each ship for the period of hostilities, April 21 to August 12, inclusive.*

Names of ships.	Period of service (days).	Average complement.	Admissions.			Number of sick days.	Daily average of patients.	Daily average of patients, 1897.	Ratio per 1,000 of force sick daily.	Ratio per 1,000 of force sick daily, 1897.	Number discharged to duty.	Number discharged to hospital.	Number invalided from the service.	Number of deaths.	Number continued.
			Disease.	Injury.	Total.										
Amphitrite	114	260	77	20	97	874	8.28	1.21	16.00	11.00	76	16	0	0	1
Annapolia.....	114	129	29	10	39	325	2.85	2.29	20.50	16.22	38	4	0	0	0
Badger.....	110	252	37	1	38	167	1.51	.....	5.99	.....	23	2	0	0	0
Bancroft.....	114	143	48	7	55	246	2.15	2.78	15.03	23.97	38	9	0	1	2
Brooklyn.....	114	552	110	41	151	888	8.66	9.66	15.68	20.00	130	7	0	2	13
Castine.....	114	146	25	13	38	459	4.02	4.47	27.63	31.48	31	4	0	0	1
Celtic.....	78	123	48	13	61	237	2.91	.....	23.65	.....	45	13	0	0	0
Columbia.....	114	450	90	23	113	603	5.28	1.72	11.73	8.43	85	23	0	0	0
Detroit.....	114	252	35	4	39	228	2.00	2.95	7.93	19.17	29	3	0	0	1
Dolphin.....	114	126	22	10	32	166	1.45	1.79	11.00	17.05	25	5	0	0	2
Eagle.....	114	94	11	7	18	92	0.81	.....	12.50	.....	15	1	0	0	2
Forn.....	114	54	15	6	21	119	1.04	0.47	19.25	10.22	18	2	0	0	0
Helena.....	114	183	85	1	86	95	0.83	2.69	4.53	15.65	34	1	0	0	0
Indiana.....	114	571	123	47	170	928	8.14	6.41	14.25	14.47	147	13	0	0	7
Iowa.....	114	687	102	26	128	702	6.16	5.46	10.47	11.77	107	16	0	0	3
Katahdin.....	114	101	40	11	51	176	1.54	0.81	15.24	10.25	29	12	0	0	1
Lancaster.....	100	595	101	36	136	685	6.85	5.78	12.12	24.49	78	41	17	1	1
Lebanon.....	114	63	19	3	22	43	0.37	.....	5.87	.....	8	5	0	0	0
Machias.....	114	158	39	9	48	304	2.68	4.36	18.83	30.92	33	13	0	0	2
Marblehead.....	114	267	70	31	101	669	5.86	4.96	21.94	23.63	62	11	0	1	7
Marietta.....	114	144	56	2	57	360	3.33	.....	23.12	.....	52	3	0	0	2
Massachusetts.....	114	480	121	31	152	765	5.71	5.13	13.97	11.45	123	8	0	1	10
Mayflower.....	114	171	24	13	37	208	3.49	.....	20.40	.....	31	2	0	0	0
Minantonomah.....	114	175	57	12	69	370	3.24	.....	18.51	.....	62	6	2	0	0
Minneapolis.....	114	437	88	35	123	658	5.77	8.68	13.51	12.43	92	14	2	0	2

TABLE I.—North Atlantic Station.—Period of service, average complements, etc.—Cont'd.

Name of ship.	Period of service (days).	Average complement.	Admissions.			Number of sick days.	Daily average of patients.	Daily average of patients, 1897.	Ratio per 1,000 of force sick daily.	Ratio per 1,000 of force sick daily, 1897.	Number discharged to duty.	Number discharged to hospital.	Number invalided from the service.	Number of deaths.	Number continued.
			Disease.	Injury.	Total.										
Montgomery	114	281	114	7	121	772	6.77	3.23	24.09	13.40	110	6	0	0	5
Nashville	114	179	29	13	52	282	2.48	1.58	12.85	9.57	46	3	0	0	3
New Orleans	114	411	135	24	159	572	5.01	.....	12.18	.....	140	17	0	0	3
Newport	114	142	34	7	41	237	2.07	1.85	14.57	14.23	26	14	0	1	0
New York	114	652	189	37	226	1,047	14.44	6.97	22.14	13.03	169	24	0	2	32
Oregon	114	324	81	21	102	685	6.00	4.44	11.45	10.11	80	15	0	1	6
Panther	114	141	44	2	46	226	1.98	.....	14.04	.....	42	4	0	0	0
Peria	91	50	11	2	13	54	0.59	.....	11.80	.....	12	1	1	0	0
Prairie	97	251	42	10	52	171	1.76	.....	7.01	.....	39	12	0	0	3
Princeton	78	138	30	6	36	103	1.32	.....	9.56	.....	23	11	0	0	2
Putnam	114	223	76	20	96	533	4.67	1.56	20.04	8.00	71	18	2	0	5
San Francisco	114	372	142	24	166	815	7.14	8.96	19.19	24.41	118	42	0	1	6
Scholar	84	106	38	4	42	118	1.40	.....	12.96	.....	38	2	0	0	2
Seabury	103	52	14	5	19	45	0.43	.....	8.26	.....	13	4	0	0	2
Supply	101	77	34	5	39	181	1.79	.....	23.24	.....	33	0	0	0	6
Tarar	114	167	20	14	33	313	2.74	2.07	16.40	13.62	35	9	1	0	8
Texas	114	433	71	45	116	572	5.02	5.21	11.59	14.12	85	30	0	1	0
Topeka	59	197	33	5	38	176	2.98	.....	5.32	.....	30	4	0	0	4
Yacovius	114	78	9	7	16	90	0.78	0.91	10.00	14.00	12	2	0	0	2
Vicksburg	114	139	10	4	14	178	1.58	0.66	11.23	6.29	5	6	0	1	0
Wilkeson	114	177	41	8	49	265	2.32	3.83	13.10	20.52	38	4	0	0	7
Yankton	89	83	14	4	18	65	0.73	.....	8.79	.....	17	0	0	0	1
Yosemite	96	322	163	12	175	702	7.16	.....	22.23	.....	160	8	1	0	7
Total		11,590	2,800	701	3,501	19,670	.....	.....	.....	.....	2,777	476	29	16	208

TABLE II.—North Atlantic Station.—Detailed Statement.

Diseases.	Ad- mitted.	Dis- charged to duty.	Invalided.		Died.	Con- tinued Aug. 12.
			To hos- pital.	From service.		
CLASS I.						
<i>Parasites and parasitic diseases.</i>						
Scabies	2	1	1			
Tinea	2	2				
Tinea trichophytina	2	2				
CLASS II.						
<i>General infectious diseases (nonvenereal).</i>						
Cochlexia malarialis	14	5	6		1	
Catarrhus epidemialis	218	202	13	1		2
Cholera morbus	9	4	2			1
Diphtheria	1		1			
Dysentaria acuta	17	11	5			1
Dysentaria chronica	1		1			
Erysipelas	6	6				1
Febris enterica	12	2	10			
Febris intermittens	128	118	12			8
Febris pneumonica	11	1	9	1		
Febris remittens	74	47	15			12
Measles	19	6	11			2
Parvula epidemica	1	1				
Rheumatismus articularis acutus	47	25	16			6
Rheumatismus articularis chronicus	10	1	8			1
Scarlatina	7	7				
Tuberculosis pneumonica acuta	8		7	1		
Tuberculosis pneumonica chronica	10	1	9			
Variola	29	27				2

TABLE II.—North Atlantic Station.—Detailed Statement—Continued.

Diseases.	Ad- mitted.	Dis- charged to duty.	Invalided.		Died.	Con- tinued Aug.12
			To hos- pital.	From service.		
CLASS III.						
<i>Constitutional disorders of nutrition.</i>						
Anæmia	18	9	5	3	.....	1
Debilitas senilis	2	.....	1	.....	.....	1
Diabetes mellitus.....	2	.....	2	.....	.....	.....
Leucocythemia	1	.....	1	.....	.....	.....
Lithæmia.....	3	.....	3	.....	.....	.....
Purpura hæmorrhagica.....	1	.....	1	.....	.....	.....
CLASS IV.						
<i>Diseases of the nervous system.</i>						
Apoplexia	2	.....	.....	.....	2	.....
Atrophia muscularis progressiva.....	1	.....	1	.....	.....	.....
Cephalalgia.....	24	23	1	.....	.....	.....
Dementia	1	1	.....	.....	.....	.....
Epilepsia	12	3	6	3	.....	.....
Febris continua simplex.....	51	46	2	.....	.....	3
Febris ephemera	118	110	.....	.....	.....	3
Febris thermica	22	19	2	.....	.....	1
Hemicrania.....	2	1	1	.....	.....	.....
Mania	3	1	2	.....	.....	.....
Melancholia	6	1	4	.....	.....	1
Meningitis	2	.....	2	.....	.....	.....
Monoplegia.....	2	2	.....	.....	.....	.....
Nausea marina	20	15	4	1	.....	.....
Neuralgia.....	34	32	1	.....	.....	1
Neurasthenia.....	20	5	12	1	.....	3
Neuritis	1	1	.....	.....	.....	.....
Neuritis multiplex	1	1	.....	.....	.....	.....
Neurosis hysteroides	2	.....	2	.....	.....	.....
Paranoia.....	2	.....	2	.....	.....	.....
Prostratio thermica.....	169	162	3	1	.....	3
Solatica.....	12	9	2	.....	.....	1
Torticollis spasmodica.....	1	1	.....	.....	.....	.....
Vertigo.....	16	12	3	.....	.....	1
CLASS V.						
<i>Diseases of the visual apparatus.</i>						
Amblyopia	1	.....	1	.....	.....	.....
Asthenopia	2	.....	1	.....	.....	1
Conjunctivitis.....	22	21	.....	.....	.....	1
Corneæ ulcus.....	2	1	1	.....	.....	.....
Iritis	3	1	2	.....	.....	.....
Retinitis.....	2	1	1	.....	.....	.....
CLASS VI.						
<i>Diseases of the auditory apparatus.</i>						
Otalgia	4	4	.....	.....	.....	.....
Otitis externa.....	7	7	.....	.....	.....	.....
Otitis media	26	22	3	.....	.....	1
Surditas	1	.....	1	.....	.....	.....
CLASS VII.						
<i>Diseases of the olfactory apparatus.</i>						
Antri abscessus.....	1	.....	1	.....	.....	.....
Rhinitis acuta	7	7	.....	.....	.....	.....
CLASS VIII.—DISEASES OF THE NUTRITIVE APPA- RATUS.						
<i>Subsidiary class 1.—Diseases of the digestive appa- ratus.</i>						
Ani prolapsio.....	1	.....	.....	.....	.....	1
Ani rhagades	2	.....	2	.....	.....	.....
Appendicitis.....	8	1	7	.....	.....	.....
Catarrhus gastricus acutus	32	27	3	.....	.....	1
Catarrhus gastricus chronicus.....	7	4	2	1	.....	.....
Catarrhus intestinalis acutus.....	60	44	6	.....	.....	3
Catarrhus intestinalis chronicus	4	1	3	.....	.....	.....

TABLE II.—North Atlantic Station.—Detailed Statement—Continued.

Diseases.	Ad- mitted.	Dis- charged to duty.	Invalided.		Died.	Con- tinued Aug.12.
			To hos- pital.	From service.		
CLASS VIII.—DISEASES OF THE NUTRITIVE APPA- RATUS—continued.						
<i>Subsidiary class 1.—Diseases of the digestive appa- ratus—Continued.</i>						
Cholelithiasis.....	3	1	2			
Colica.....	60	57	1			2
Constipatio.....	20	18	1			1
Diarrhea simplex.....	228	206	2			20
Dyspepsia nervosa.....	3	1	2			
Fistula in ano.....	3	1	2			
Gastralgia.....	1	1				
Hæmorrhoids.....	22	15	5			2
Hepatis congestio.....	32	27	1			4
Hepatitis suppurativa.....	2		2			
Icterus.....	5	3	2			
Odontalgia.....	3	2	1			
Periodontitis.....	5	5				
Periproctitis.....	2	1	1			
Pharyngitis.....	22	20	2			
Tonsillitis.....	103	98	2			3
<i>Subsidiary class 2.—Diseases of the circulatory apparatus.</i>						
Blood vessels:						
Aneurysma.....	1		1			
Angina pectoris.....	1		1			
Arteriosclerosis.....	3		3			
Cordis hypertrophia.....	1	1				
Cordis palpitatio.....	12	5	6			1
Cordis valvularum morbus.....	5		4	1		
Pericarditis.....	1			1		
Phlebitis.....	2	1	1			
Varix.....	2		1			1
Lymphatics:						
Lymphadenitis.....	17	12	3			2
Lymphangitis.....	1	1				
<i>Subsidiary class 3.—Diseases of the respiratory apparatus.</i>						
Asthma.....	3	2		1		
Bronchopneumonitis.....	2		1		1	
Bronchitis acuta.....	153	141	10			2
Bronchitis chronica.....	9	3	4			2
Catarrhus bronchialis.....	33	31				2
Hæmoptysis.....	1		1			
Laryngitis acuta.....	8	8				
Laryngitis chronica.....	1	1				
Pleuritis acuta.....	7	1	4			2
Pleuritis chronica.....	3	1	2			
CLASS IX.						
<i>Diseases of the motory apparatus.</i>						
Arthritis.....	4	1	3			
Bursitis.....	5	5				
Myalgia acuta.....	117	105	7			5
Myalgia chronica.....	6	4	2			
Periostitis.....	4	4				
Synovitis.....	19	13	5			1
Thecitis.....	2	1	1			
CLASS X.						
<i>Diseases of the cutaneous apparatus.</i>						
Abscessus.....	116	97	5			14
Acne.....	1	1				
Carbunculus.....	2	2				
Cellulitis.....	8	5	2			1
Clavus.....	1	1				
Cutis fissuræ.....	1	1				
Eczema.....	7	5				2
Erythema.....	11	10				1
Furunculus.....	60	57				3
Herpes simplex.....	2	2				
Impetigo.....	1	1				

TABLE II.—North Atlantic Station.—Detailed Statement—Continued.

Diseases.	Ad- mitted.	Dis- charged to duty.	Invalided.		Died.	Con- tinued Aug. 12
			To hos- pital.	From service.		
CLASS X—continued.						
<i>Diseases of the cutaneous apparatus—Continued.</i>						
Lichen.....	7	7	.....	.....	.....	.....
Paronychia.....	8	5	.....	.....	.....	3
Pemphigus.....	19	17	1	.....	.....	1
Ulcus.....	19	13	4	.....	.....	2
Unguis involutus.....	2	1	.....	.....	.....	1
Urticaria.....	2	2	.....	.....	.....	.....
Verruca.....	1	.....	1	.....	.....	.....
CLASS XI.						
<i>Venereal diseases and diseases of the genito- urinary apparatus.</i>						
Adenitis inguinalis (venereal).....	23	11	10	.....	.....	3
Arthritis gonorrhoeica.....	3	2	1	.....	.....	.....
Chancroid.....	9	4	4	.....	.....	1
Cystitis.....	10	9	1	.....	.....	.....
Enuresis.....	1	1	.....	.....	.....	.....
Epididymitis.....	16	10	4	.....	.....	2
Gonorrhoea.....	25	15	9	1	.....	.....
Hæmaturia.....	1	.....	1	.....	.....	.....
Hydrocele.....	1	1	.....	.....	.....	.....
Nephritis chronica.....	7	.....	3	1	.....	3
Orchitis.....	17	14	3	.....	.....	.....
Paraphimosis.....	1	1	.....	.....	.....	.....
Phimosis.....	2	2	.....	.....	.....	.....
Syphilis consecutiva.....	43	18	21	2	.....	2
Syphilis primitiva.....	7	5	1	1	.....	.....
Urethræ strictura.....	7	3	4	.....	.....	.....
Urina suppressa.....	1	1	.....	.....	.....	.....
Varicocele.....	2	.....	2	.....	.....	.....
CLASS XII.						
<i>Cysts and new growths.</i>						
Chondroma.....	1	.....	1	.....	.....	.....
Epithelioma.....	2	1	1	.....	.....	.....
Sarcoma.....	2	1	1	.....	.....	.....
CLASS XIII.						
<i>Injuries.</i>						
Abrasio.....	8	8	.....	.....	.....	.....
Ambustio ex calore.....	59	48	5	.....	.....	6
Asphyxia.....	1	.....	.....	.....	.....	1
Asphyxia ex submersione.....	3	.....	.....	.....	3	.....
Concussio.....	2	1	1	.....	.....	.....
Contusio.....	186	171	8	1	.....	6
Fractura.....	40	23	11	3	.....	3
Fulminis ictus.....	1	1	.....	.....	.....	.....
Hernia.....	31	1	26	2	.....	3
Luxatio.....	4	3	1	.....	.....	.....
Membræ tympani ruptio.....	10	9	1	.....	.....	.....
Sole excoctus.....	7	7	.....	.....	.....	.....
Stemma.....	101	88	5	2	.....	6
Vulnus contusum.....	73	70	.....	.....	.....	3
Vulnus incisum.....	50	43	5	.....	.....	2
Vulnus laceratum.....	75	61	5	.....	1	3
Vulnus punctum.....	24	21	2	.....	.....	1
Vulnus sclopeticum.....	33	15	15	.....	3	.....
CLASS XV.						
<i>Poisons.</i>						
Alcoholismus.....	8	8	.....	.....	.....	.....
Venenum neuroticum.....	1	.....	.....	.....	.....	1
Vulnus venenatum.....	11	10	.....	.....	.....	1
Total.....	3,501	2,777	476	20	16	21

TABLE III.—*Asiatic Station*.—Period of service, average complements, admissions for disease and injury, sick days, daily average of patients, discharges to duty, transfers to hospital, discharges from the service, cases continued subsequent to June 30, and deaths on each ship for the period of hostilities, April 21 to June 30, inclusive.

Names of ships.	Period of service (days).	Average complement.	Admissions.			Number of sick days.	Daily average of patients.	Daily average of patients, 1897.	Ratio per 1,000 of force sick daily.	Ratio per 1,000 of force sick daily, 1897.	Number discharged to duty.	Number discharged to hospital.	Number invalided from the service.	Number of deaths.	Number continued.
			Disease.	Injury.	Total.										
Baltimore	71	402	17	11	28	292	4.11	3.93	10.22	10.03	23	2	0	0	2
Boston	71	274	66	8	74	560	7.88	8.20	28.75	22.53	71	0	0	1	2
Concord	71	167	47	15	62	393	5.53	3.38	29.57	19.89	67	0	0	0	5
Olympia	71	454	28	4	32	402	5.56	6.25	12.46	13.87	28	0	0	0	4
Petrel	71	129	32	4	36	303	4.26	3.29	33.02	25.60	35	1	0	0	0
Raleigh	71	297	56	10	66	437	8.15	6.31	20.70	18.45	60	0	0	0	6
Total		1,743	240	52	292	2,367					274	3	0	1	20

TABLE IV.—*Asiatic Station*.—Detailed statement.

Diseases.	Ad- mitted.	Dis- charged to duty.	Invalided.		Died.	Con- tinued June 30.
			To hos- pital.	From service.		
CLASS II.						
<i>General infectious diseases (nonvenereal).</i>						
Cholera morbus.....	1	1	.....	.....	.....	.....
Dysenteria acuta.....	3	2	.....	.....	1	.....
Febris enterica.....	1	.....	.....	.....	.....	1
Febris intermittens.....	6	6	.....	.....	.....	.....
Febris remittens.....	37	34	.....	.....	.....	3
Morbilli.....	1	1	.....	.....	.....	.....
Rheumatismus articularis acutus.....	5	3	2	.....	.....	.....
Tuberculosis pneumonia acuta.....	1	.....	.....	.....	.....	1
CLASS IV.						
<i>Diseases of the nervous system.</i>						
Epilepsia.....	1	1	.....	.....	.....	.....
Febris continua simplex.....	2	2	.....	.....	.....	.....
Febris ephemera.....	3	3	.....	.....	.....	.....
Febris thermica.....	1	1	.....	.....	.....	.....
Neuralgia.....	1	1	.....	.....	.....	.....
Neurasthenia.....	1	1	.....	.....	.....	.....
Prostratio thermica.....	19	19	.....	.....	.....	.....
Sciatica.....	1	1	.....	.....	.....	.....
CLASS V.						
<i>Diseases of the visual apparatus.</i>						
Amacrosis.....	1	.....	.....	.....	.....	1
Conjunctivitis.....	1	1	.....	.....	.....	.....
Iritis.....	1	1	.....	.....	.....	.....
CLASS VI.						
<i>Diseases of the auditory apparatus.</i>						
Otitis media.....	3	3	.....	.....	.....	.....
Surditas.....	2	2	.....	.....	.....	.....
CLASS VII.						
<i>Diseases of the olfactory apparatus.</i>						
Rhinitis acuta.....	3	3	.....	.....	.....	.....

TABLE IV.—*Asiatic Station.*—Detailed statement—Continued.

Diseases.	Ad- mitted.	Dis- charged to duty.	Invalided.		Died.	Con- tinued Aug.12.
			To hos- pital.	From service.		
CLASS VIII.—DISEASES OF THE NUTRITIVE APPA- RATUS.						
<i>Subsidiary Class 1.—Diseases of the digestive appa- ratus.</i>						
Appendicitis	1	1	.....	.....	.....	.....
Catarrhus gastricus acutus.....	6	6	.....	.....	.....	.....
Catarrhus intestinalis acutus.....	23	23	.....	.....	.....	.....
Catarrhus intestinalis chronicus	1	.....	.....	.....	.....	1
Cholelithiasis.....	1	1	.....	.....	.....	.....
Colica	2	2	.....	.....	.....	.....
Diarrhœa simplex	13	13	.....	.....	.....	.....
Dyspepsia nervosa.....	1	1	.....	.....	.....	.....
Fistula in ano	1	1	.....	.....	.....	.....
Gastralgia.....	1	1	.....	.....	.....	.....
Hæmorrhoids.....	3	2	.....	.....	.....	1
Hepatis congestio	1	.....	.....	.....	.....	1
Icterus	1	1	.....	.....	.....	.....
Tonsillitis	9	9	.....	.....	.....	.....
<i>Subsidiary Class 3.—Diseases of the respiratory apparatus.</i>						
Bronchitis acuta.....	2	2	.....	.....	.....	.....
Catarrhus bronchialis.....	1	1	.....	.....	.....	.....
Laryngitis acuta.....	1	1	.....	.....	.....	.....
Pleuritis acuta.....	1	1	.....	.....	.....	.....
CLASS IX.						
<i>Diseases of the motory apparatus.</i>						
Myalgia acuta.....	5	5	.....	.....	.....	.....
Periostitis.....	2	1	.....	.....	.....	1
CLASS X.						
<i>Diseases of the cutaneous apparatus.</i>						
Abscessus.....	7	6	.....	.....	.....	1
Cellulitis	1	1	.....	.....	.....	.....
Furunculus.....	5	5	.....	.....	.....	.....
Onychia.....	1	1	.....	.....	.....	.....
Paronychia	1	1	.....	.....	.....	.....
Pemphigus	1	1	.....	.....	.....	.....
Ulcus.....	2	1	.....	.....	.....	1
CLASS XI.						
<i>Venereal diseases and diseases of the genito-urinary apparatus.</i>						
Adenitis inguinalis (venereal).....	16	16	.....	.....	.....	.....
Arthritis gonorrhœica	2	1	.....	.....	.....	1
Cystitis.....	3	3	.....	.....	.....	.....
Epididymitis	5	4	.....	.....	.....	1
Oorchitis	7	7	.....	.....	.....	.....
Paraphimosis.....	3	3	.....	.....	.....	.....
Phimosis	2	2	.....	.....	.....	.....
Prostatitis.....	1	.....	.....	.....	.....	1
Syphilis consecutiva.....	11	11	.....	.....	.....	.....
Syphilis primitiva	5	4	.....	.....	.....	1
Urethræ strictura.....	1	1	.....	.....	.....	.....
CLASS XIII.						
<i>Injuries.</i>						
Abrasio.....	3	3	.....	.....	.....	.....
Ambustio ex calore.....	6	6	.....	.....	.....	.....
Contusio.....	6	5	.....	.....	.....	1
Fractura.....	4	3	.....	.....	.....	1
Hernia	2	2	.....	.....	.....	.....
Membrana tympani ruptio.....	5	5	.....	.....	.....	.....
Stemma.....	9	8	1	.....	.....	.....
Vulnus contusum.....	8	7	.....	.....	.....	1
Vulnus incisum.....	3	2	.....	.....	.....	1
Vulnus laceratum	2	2	.....	.....	.....	.....
Vulnus punctum	2	2	.....	.....	.....	.....
Vulnus sclopeticum.....	2	2	.....	.....	.....	.....
CLASS XV.						
<i>Poisons.</i>						
Dermatitis venenata.....	1	1	.....	.....	.....	.....
Total	298	274	3	.....	1	20

TABLE V.—United States Marine Battalion, North Atlantic Fleet.—Detailed Statement.

Diseases.	Admitted.	Discharged to duty.	To hospital.	Died.	Continued August 12.	Total number of sick days.
CLASS I.						
<i>Parasites and parasitic diseases.</i>						
Tinea trichophytina.....	1	1				3
CLASS II.						
<i>General infectious diseases (nonvenereal).</i>						
Catarrhus epidemicus.....	37	37				81
Dysenteria acuta.....	7	6			1	69
Febris intermittens.....	18	15	1		2	167
Febris pneumonica.....	3	3				102
Febris remittens.....	1	1				7
Morbilli.....	12	11	1			236
Rheumatismus articularis acutus.....	3	1	2			65
Tuberculosis pneumonica chronica.....	1		1			22
Vaccina.....	1	1				3
CLASS IV.						
<i>Diseases of the nervous system.</i>						
Febris continua simplex.....	6	5	1			31
Melancholia.....	3		3			6
Neurasthenia.....	3	1	2			12
Neurosis hysteroides.....	1		1			3
Prostratio thermica.....	2	2				3
CLASS V.						
<i>Diseases of the visual apparatus.</i>						
Conjunctivitis.....	1	1				3
Iritis.....	1	1				7
CLASS VI.						
<i>Diseases of the auditory apparatus.</i>						
Otitis media.....	1		1			1
CLASS VIII.—DISEASES OF THE NUTRITIVE APPARATUS.						
<i>Subsidiary Class I.—Diseases of the digestive apparatus.</i>						
Catarrhus gastricus acutus.....	1	1				1
Catarrhus gastricus chronicus.....	1		1			5
Catarrhus intestinalis acutus.....	1		1			2
Diarrhoea simplex.....	7	4	1		2	59
Hæmorrhoids.....	1	1				5
Icterus.....	1		1			23
<i>Subsidiary Class II.—Diseases of the circulatory apparatus.</i>						
Lymphadenitis.....	2	1	1			30
CLASS IX.						
<i>Diseases of the motory apparatus.</i>						
Synovitis.....	1		1			16
Thecitis.....	1	1				23
CLASS X.						
<i>Diseases of the cutaneous apparatus.</i>						
Abcessus.....	6	4	2			38
Ecthyma.....	1	1				38
Furunculus.....	2	2				17
Herpes zoster.....	1	1				19
Lichen.....	2	2				18
CLASS XI.						
<i>Venereal diseases and diseases of the genito-urinary apparatus.</i>						
Adenitis inguinalis (venereal).....	2		2			38
Chancroid.....	1	1				21
Cystitis.....	1		1			22
Epididymitis.....	1	1				31
Gonorrhœa.....	2	2				2
Syphilis consecutiva.....	3	3				6

TABLE V.—U. S. Marine Battalion, North Atlantic Fleet.—Detailed Statement—Cont'd.

Diseases.	Admitted.	Discharged to duty.	To hospital.	Died.	Continued August 12.	Total number of sick days.
CLASS XII.						
<i>Cysts and new growths.</i>						
Cystis	1	1				2
Lipoma	1	1				2
CLASS XIII.						
<i>Injuries.</i>						
Contusio	6	6				22
Fractura	2		1	1		24
Hernia	2		2			5
Luxatio	1	1				12
Sole excoctus	6	8				22
Stemma	4	3			1	21
Vulnus incisum	4	3	1			21
Vulnus laceratum	5	5				23
Vulnus punctum	1	1				3
Vulnus sclopeticum	20	2	13	5		42
CLASS XV.						
<i>Poisons.</i>						
Dermatitis venenata	1	1				6
Vulnus venenatum	1	1				2
Total	127	144	41	6	6	1,000

TABLE VI.—Mortuary record of the Navy and Marine Corps during period of hostilities.

Causes of death. a	Number of deaths.						Total.
	Naval hospitals	Hospitals other than naval.	Ships—North Atlantic Squadron.	Ships—Asiatic Squadron.	Marine Battalion.	Vessels elsewhere and shore stations.	
Appendicitis	2	2				1	5
Apoplexia	1		3				4
Asphyxia ex submersione			4	1		1	6
Abcessus cerebri	1						1
Alcoholismus			1				1
Aneurysma	1					1	2
Bronchopneumonitis			1			1	2
Carcinoma	2		1				3
Cordis valvularum morbus	1						1
Catarrhus intestinalis chronicus	1						1
Cachexia malarialis			1				1
Diphtheria	1						1
Dysenteria acuta			1	1			2
Febris pneumonica	6		1				7
Febris remittens		1	1				2
Febris enterica	3	1					4
Fractura (cervical vertebrae)					1		1
Hepatitis chronica				1			1
Meningitis	3	2				1	6
Nephritis chronica	2						2
Obstructio intestinalis		1					1
Septicæmia	2						2
Sclerosia multiplex	1						1
Tuberculosis pneumonica acuta	2						2
Tuberculosis pneumonica chronica	4			1			5
Vulnus sclopeticum		1	16		5		22
Total	32	8	20	4	6	5	75

a Only thirteen cases of typhoid fever occurred on the vessels included in Tables I and III. They furnished 1 death, and that occurred in hospital. The cases of dysentery and diarrhoeal affections on the same vessels furnished only 1 death. Of the 40 deaths reported from hospitals only 6 occurred among those transferred from the vessels mentioned—1 each from gunshot wound, appendicitis, typhoid fever, pneumonia, meningitis, and diphtheria.

REPORT OF THE COMMANDANT OF THE UNITED STATES MARINE CORPS.

HEADQUARTERS U. S. MARINE CORPS,
Washington, D. C., September 24, 1898.

SIR: I have the honor to submit the following report of the condition and services of the United States Marine Corps for the past year.

Since the date of my last report I have made a personal inspection of the marine barracks at the navy-yard, Portsmouth, N. H.; Boston, Mass.; Brooklyn, N. Y.; League Island, Pa., and the naval station, Newport, R. I. It is my intention to visit the navy-yards, Norfolk, Va.; Pensacola, Fla.; the Naval Academy, Annapolis, Md., and the naval station, Port Royal, S. C., in a short time.

All the posts visited were found to be in excellent condition, notwithstanding the fact that a number of them have been in charge of non-commissioned officers since the troops went to the field at the beginning of the war.

At the time my last report was made the roof of the marine barracks, Boston, was being raised and electricity introduced, under special appropriations made for the purpose. This work has been completed satisfactorily, and the barracks is now sufficiently large to accommodate the guard that is required at that yard.

At Brooklyn the repairs referred to in my last report have been completed and the barracks and all buildings painted inside and out, a personal inspection showing that all the work has been done in a thoroughly satisfactory manner. The repairs were conducted by First Lieut. L. C. Lucas until April, when he left the post, and were continued by Capt. C. P. Porter, under the direction of the quartermaster of the corps.

At the Puget Sound naval station, Bremerton, Wash., the parade ground has been cleared and the barracks and officers' quarters are nearing completion.

At the naval station, Port Royal, S. C., the erection of a building for quarters for the officer stationed there has been completed in a satisfactory manner.

The buildings used as officers' quarters and marine barracks at the Mare Island Navy-Yard suffered considerable damage in the earthquake of March 31, 1898, and the estimates of the amount necessary to repair this damage, based upon reports of a board of survey, were submitted to the Secretary of the Navy on April 12, 1898, and by him approved and forwarded to Congress, the amount, \$5,425, being included in the naval appropriation act approved May 4, 1898, and made immediately available, as recommended. The appropriation was distributed as follows: Barracks, \$1,750; house No. 1, \$2,800; house No. 2, \$150; house No. 3, \$50; house No. 4, \$100; house No. 5, \$575. The earthquake mentioned destroyed the naval hospital at the Mare Island Navy-Yard, and one wing of the marine barracks was turned over to the Bureau of Medicine and Surgery for the temporary use of the sick. The barracks being thus occupied rendered it necessary to transfer a portion of the command to the *Pensacola*, lying some distance from the barracks, causing much inconvenience to the command. The building is still occupied by these patients, and it is hoped that the Bureau of Medicine and Surgery will soon have other accommodations for their use, as their occupancy of a portion of the barracks materially interferes with the progress of the repairs to the building. The repairs

have been practically finished, with the exception of the part of the building turned over to the Bureau of Medicine and Surgery.

The construction of officers' quarters at Sitka, Alaska, a contract for which has been made, has been further delayed by the fact that the desired site could not be obtained. By Executive order of October 15, 1897, the tract of land known as Lot 20a, the proposed site of the building, was made a part of the naval reservation at Sitka; but the occupants of the land refused to remove their improvements, and after many delays and unsuccessful attempts to have them removed, and after more than reasonable notice had been given to the former occupants, the commanding officer of marines at Sitka was directed to take possession of the land and remove the building. This step was not taken until all other means to secure the desired result had been exhausted. The construction of the building will be commenced as soon as information is received that the site is available.

In the naval appropriation act approved May 4, 1898, provision was made for the erection of new buildings at the Naval Academy, Annapolis, Md., and the removal of old buildings from the desired sites. The plans which were adopted provided for the erection of the new armory on the site of the marine barracks and officers' quarters, thus necessitating the demolition of these buildings. I was not aware that any such action was contemplated, as no notification was sent to me until after the bill had become a law and the work of tearing down the barracks and quarters was about to be commenced, when I received a notice from the superintendent of the Naval Academy requesting the removal of all marine property and stores from the barracks and quarters, as they were to be immediately torn down to make room for the new armory. When before the Committee on Naval Affairs of the House of Representatives, during the consideration of the naval appropriation bill, I was not aware that an appropriation was to be made to erect new buildings for the Naval Academy, rendering it necessary to tear down the marine barracks and officers' quarters, and therefore did not bring the subject to the notice of the committee when the Marine Corps appropriations were being considered. After learning that the bill provided for new Academy buildings, one of which was to be erected on the site of the marine barracks and officers' quarters, I immediately submitted to the Secretary of the Navy, on June 17, 1898, an estimate of \$81,000 for the erection of new barracks and quarters, to be included in the deficiency bill, then being considered in the Committee on Appropriations of the Senate. This estimate was approved by the Secretary of the Navy and forwarded to Congress, but was not included in the appropriation. In the estimates submitted by the undersigned for the fiscal year ending June 30, 1900, the amount above referred to is included for the erection of barracks and three sets of officers' quarters, which it is hoped the Secretary will approve and submit to Congress, with the request that the sum be made immediately available. The marines now at Annapolis are temporarily quartered on the *Monongahela*, there being no accommodations of any kind on shore for even the small guard now there. The superintendent of the Academy has requested that a full guard be sent to Annapolis for duty at the Academy, and this request will be complied with when the men are available from the ships about to be placed in reserve. Until suitable barracks are provided, it will be necessary to continue to quarter the men on board the *Monongahela*, which can be made to answer the purpose, but is not suitable for permanent quarters.

In accordance with the Department's instructions, a marine guard,

under command of First Lieut. E. K. Cole, consisting of 30 enlisted men, was established at the navy-yard, Pensacola, Fla., on December 28, 1897. The next month the guard was increased by 7 privates at the request of the commandant of the station. The men were quartered in the upper story of the building provided by the Bureau of Yards and Docks, it being considered by the medical officers of the Navy that it would be detrimental to the health of the men for them to live in the old barracks belonging to the Marine Corps, which is one story in height, with the sleeping quarters only a few feet from the ground. The building generously loaned by the Bureau of Yards and Docks, and fitted up by the quartermaster of the Marine Corps, by my order, made very comfortable quarters for the men, and the health of the detachment shows the wisdom of quartering them in the second story of a building in that climate.

Reports having shown the necessity for a better means of illumination at the marine barracks, League Island, Pa., the post being dependent upon coal oil lamps for light, and it appearing to be a measure of economy to install electric lights, money for this purpose being provided for in the contingent appropriation of the Corps, steps have been taken to put in this system of lighting. The Bureau of Yards and Docks has signified its willingness to do the necessary work, reimbursement to be made by the Marine Corps, and the work of installation has been begun. It will probably be completed in a short time. League Island is an isolated post, far removed from the city, and the electric lights will be a great comfort to the men, as they will be able to entertain themselves in the reading room and bowling alley at night, which will tend to keep them in barracks and make them more contented.

In former reports I have invited attention to the fact that the League Island barracks is a small wooden structure, built some years ago as a temporary shelter after the condemnation of the *Antietam*, where the men were then quartered. A number of efforts have been made to get an appropriation for a new barracks, but without success. The League Island station is now becoming such an important one, requiring a much larger guard than at present can be quartered there, that in the near future a new barracks will be an absolute necessity. A very desirable site has been set aside for the use of the Marine Corps, and it is only necessary to have an appropriation to begin work.

It has been found necessary to include in the estimates for the next fiscal year an increase of \$1,300 for additional room for the use of the depot of supplies, assistant quartermaster's office, Philadelphia, Pa., where all the clothing and equipments of the Corps are stored and where the cutting of all clothing takes place. Reports of the quartermaster of the Corps and a personal inspection by myself have shown the building now in use to be entirely inadequate for present needs. The building was rented when the strength of the Corps was 2,100 men. Its permanent strength at present is over 3,000 enlisted men, and the additional supplies and clothing required make it absolutely necessary that larger quarters for the assistant quartermaster's office be provided. In view of these facts it is hoped that the Secretary will approve the estimates submitted.

Shortly before war was declared between the United States and Spain Congress appropriated \$50,000,000 for the national defense, of which the Secretary allotted to the Marine Corps, at different times, \$106,529.64, for ammunition, equipments, clothing, etc., and careful preparations were immediately begun looking to the thorough equipment, in every respect, of the marines for war service.

In accordance with the verbal instructions of the Department of April 16, 1898, to organize a battalion at New York for service in Cuba, I issued orders on the 17th and 18th of April for the immediate assembling at New York of detachments of men from all the Eastern posts of the Corps and receiving ships. On the night of April 18, by direction of the Secretary, I proceeded to New York for the purpose of organizing the marine battalion for service. The battalion, as organized, consisted of 23 commissioned officers of the Marine Corps, 1 surgeon of the Navy, and 623 enlisted men, all under command of Lieut. Col. R. W. Huntington, U. S. M. C. The battalion was divided into six companies, one of which was an artillery company, having four 3-inch rapid-fire guns, received from the ordnance department, navy-yard, New York, and was composed of young, strong, and healthy men. The following is the organization of the battalion:

Lieut. Col. R. W. Huntington, commanding.
 Maj. P. C. Pope.
 Maj. H. C. Cochrane.
 First Lieut. H. L. Draper, adjutant.
 Capt. C. L. McCawley, A. Q. M., quartermaster.
 Surg. John M. Edgar, United States Navy, surgeon.
 First Sergt. Henry Good, sergeant-major.
 First Sergt. W. J. Limerick, quartermaster-sergeant.

Company A: Capt. Allan C. Kelton, First Lieut. F. J. Moses, Second Lieut. L. J. Magill.

Company B: Capt. B. R. Russell, First Lieut. C. L. A. Ingate, Second Lieut. M. J. Shaw.

Company C: Capt. G. F. Elliott, First Lieut. L. C. Lucas, Second Lieut. P. M. Bannon.

Company D: Capt. W. F. Spicer, First Lieut. W. C. Neville, Second Lieut. Newt. H. Hall.

Company E: Capt. H. K. White, First Lieut. J. E. Mahoney, First Lieut. A. S. McLemore.

Company F (artillery): Capt. F. H. Harrington, First Lieut. C. G. Long, First Lieut. W. N. McKelvy.

Color guard: One sergeant, two corporals.

Each company consisted of 1 first sergeant, 4 sergeants, 4 corporals, 1 drummer, 1 fifer, and 92 privates; total, 103.

Total in battalion, 23 commissioned officers, 623 enlisted men.

Before leaving Washington for New York, I was informed by the Department that the commandant, navy-yard, New York, had been directed to fit out the *Panther*, formerly the *Venezuela*, for the transportation of a battalion of 400 men, the number decided upon by the Department, and that he had been instructed to render me all possible assistance in fitting out the ship as a transport, having regard for the health and comfort of the men. Upon my arrival at the navy-yard, New York, I reported to the commandant of the station, Rear-Admiral F. M. Bunce, United States Navy, who afforded me every facility, and accepted every suggestion looking to the proper fitting out of the ship. Everything was done to make the men as comfortable as possible in the way of providing bunks and other conveniences, although the ship was not well adapted for use as a transport, as there were no air ports between decks, and the only ventilation was from the hatches used for loading freight and two small ventilators in the after part of the ship.

The vessel was ready in two days for the battalion of 400 men, which could have sailed then. When the battalion was ready to sail, two days after the arrival of the men at New York, orders were received from the Department directing that two companies be added to the battalion, and accommodations for these additional men had to be immediately provided. Work was proceeded with night and day to make the neces-

sary provision for the increased number of men, and two days later, on April 22, the *Panther* sailed, with the battalion of 24 commissioned officers and 623 enlisted men, for Cuba.

As the men marched from the barracks to the ship they were greeted with great enthusiasm by the officers, sailors, and others on the vessels at the navy-yard, as well as those on shore. The band of the yard was loaned by the commandant to escort the battalion to the landing. As the *Panther* left the navy-yard and proceeded down the river she was repeatedly greeted with cheers and whistles from the vessels passed.

The greatest care was exercised in fitting out the battalion by the quartermaster of the Corps, Maj. F. L. Denny, U. S. M. C., the quartermaster of the battalion, Capt. C. L. McCawley, U. S. M. C., and myself, and when the *Panther* sailed the battalion was thoroughly fitted out with all the equipments and necessities for field service under the conditions prevailing in Cuba which experience and careful consideration could suggest, including mosquito netting, woolen and linen clothing, heavy and light weight underwear, three months' supply of provisions, wheelbarrows, push carts, pickaxes, shovels, barbed-wire cutters, wall and shelter tents, and a full supply of medical stores. Campaign suits of brown linen and campaign hats were ordered, but owing to the great demand for these articles at the time by the Army it was impossible to send them with the battalion. They were shipped later, however, and proved a great comfort to the men. Tent floors were purchased at Key West.

After orders were received to increase the strength of the battalion by two companies, making in all 623 men, it was found that the *Panther* would be very much crowded with this number on board. I reported the fact to the commandant of the station, and was informed by him that he had received orders to fit out the *Resolute*, formerly the *Yorktown*, as a permanent transport for the use of the battalion. This vessel was particularly well adapted for use as a transport, as she had a large number of staterooms for the accommodation of officers, and more than enough accommodations for a thousand men, and her upper between decks were open fore and aft, making a clear, unobstructed deck the length of the ship, fitted with air ports throughout and a system of artificial ventilation by steam blowers. This deck is large enough to permit the erection of standing bunks sufficient to accommodate with ease about 850 men, and if all the space in the ship were utilized, bunks for 1,000 men could be erected. After my return to Washington, I suggested to the Department that distillers and a machine for manufacturing ice be installed in the vessel, which was done. I also recommended to the Department that, as there is frequently occasion to transport marines and the crews of vessels, the *Resolute* be retained in the service as a permanent transport, and I respectfully renew this recommendation. After the *Resolute* was fitted out and ready to sail and provisions placed on board for the battalion, the exigencies of the service required that she be taken for other purposes, and she was not available for the use of the battalion until it embarked at Guantanamo for the Isle of Pines.

After leaving New York the *Panther* proceeded to Hampton Roads for the purpose of awaiting a convoy to Cuba, arriving on April 23, 1898. Maj. P. C. Pope and First Lieut. J. E. Mahoney, who had been ordered to the battalion, joined it at Hampton Roads. The *Panther* left Hampton Roads April 26, under convoy of the U. S. S. *Montgomery*, arriving at Key West April 29. During the time the *Panther* remained at Key West, from the date last mentioned to June 7, the men were landed and

went into camp there. The battalion received orders at 5:30 in the afternoon of May 24 to land, with all stores, by 3 o'clock the following morning, which was accomplished. Just before the *Panther* sailed from Key West, Maj. P. C. Pope was detached from the battalion. The *Panther* sailed from Key West for Cuba on June 7, 1898, and arrived at Santiago de Cuba on the morning of the 10th. On the same day, at 1 p. m., the ship arrived at Guantanamo Bay, Cuba, and at 2 p. m. of that day the battalion landed, with stores, and prepared to go into camp. On the 11th the camp was attacked by a much superior force of Spaniards, and from that time until the 14th the battalion was constantly under fire, and repulsed the enemy on every attack. The holding of the position at Guantanamo Bay was of the utmost importance to the Navy, as it was the only harbor where the vessels could seek shelter during the hurricane season. Owing to the dense undergrowth, affording safe shelter to the Spanish sharpshooters, it would have been impossible for the vessels, by shelling the shore, to keep the enemy from harassing those on board the ships with their Mauser rifles to such an extent as to make it dangerous for them to remain there. The report of Colonel Huntington, from the organization of the battalion until its return from Cuba, is appended, and it is respectfully requested that it may be printed as a part of this report. Also appended is a report of Capt. Geo. F. Elliott, of the battalion, who was sent out on June 14 with a detachment of two companies of the battalion, and 50 Cubans, for the purpose of destroying a well at Cuzco, about 6 miles from the camp, which was the only water supply of the enemy within 12 miles. This small force attacked and defeated a body of about 500 Spaniards and accomplished the destruction of the well.

About 1 a. m. on the morning of the 12th of June, during a very severe attack on the camp, Asst. Surg. John Blair Gibbs, U. S. N., was killed by a Mauser bullet, reported by Surg. John M. Edgar, of the battalion, to have been fired at a range of from 600 to 800 yards. The death of Assistant Surgeon Gibbs cast a gloom over the whole command, as he was a most popular officer, liked by all, and his services were very much missed and the battalion could ill afford to lose them.

I regret to have to report the following list of the enlisted men of the Corps who lost their lives in the brave defense of the flag at Guantanamo Bay:

Killed: Sergt. Maj. Henry Good, Sergt. Charles W. Smith, Private Goode Taurman, Private William Dumphy, and Private James McColgan.

The following men of the battalion were severely wounded: Corpl. William B. Glass, Private Bartholomew McGowan, Private James D. Bourke, Private Robert J. Fleming, Private Albert E. Halvosa, Private Patrick Long, Private Charles C. Marley, Private Lewis L. Noonan, Private James Roxberry, Private Thomas Wallace, and Private Arthur Walker.

On the 5th of August the battalion embarked on the *Resolute*, which had been previously carefully fitted out as a transport as stated above, and on the 9th of the same month sailed for the Isle of Pines. After sailing, the destination of the vessel was changed to Manzanillo, where the ship arrived on August 12.

On August 13, news having been received of the signing of the peace protocol, the town surrendered, and on the 14th the *Resolute*, with the battalion on board, sailed for Playa del Este. On the 18th of the same month the *Resolute*, having taken on board certain officers and men of

the artillery of the Army, sailed for Montauk Point, at which place she arrived on the 23d. Having landed the army detachment, and getting a clean bill of health, she proceeded to Portsmouth, N. H., where the battalion disembarked on August 26.

Before the battalion came North I suggested to the Secretary that I would like to order it into camp at Portsmouth, N. H., on account of the healthful climate there, with the object of enabling the men to recuperate after their arduous service in the enervating climate of Cuba. This suggestion being approved by the Secretary, I sent the quartermaster of the Corps to Portsmouth to make all arrangements for the location of a camp, including the leading of a supply of water from the reservoir, preparing tent floors, making necessary sanitary arrangements, procuring straw for bedding, arranging for the supplying of provisions, etc. The battalion arrived on August 26, as stated above, and went into camp.

On September 3, under orders from the Secretary, I personally inspected the camp and the men. I found the camp in excellent sanitary condition and the men all well, with the exception of two, who had a slight attack of fever, which the surgeon informed me would not result seriously. This showing is considered to be somewhat remarkable, in view of the fact that the men of the battalion were the first of the United States forces to land in Cuba, and remained there until they sailed for the north August 18.

On the 16th, the men having improved so much in condition as to make it safe to return them to their stations, some of which are in the South, and wishing to get them away from Portsmouth before the equinoctial storm, I issued orders to disband the battalion. The marked improvement in the condition of the officers and men shows that it was a wise provision to put them in camp in the healthful climate of the coast of New England, when they arrived from Cuba, instead of distributing them immediately to their respective stations. Colonel Huntington, in reporting the disbandment of the battalion, states his belief that the encampment has been of great benefit to the health of the officers and men.

The detachments of men from the battalion belonging to the marine barracks at New York, Philadelphia, Norfolk, Washington, and Annapolis left Portsmouth together and passed through Boston in a body. As they marched through the city the men were greeted with great enthusiasm, and much favorable comment was occasioned by their excellent health and military appearance.

The Washington detachment, consisting of 3 officers and 164 men, arrived in the city September 22. The morning of the day of their arrival the President notified me that he desired to review the detachment. The honor thus tendered being unsolicited was highly appreciated, and the men upon their arrival were marched through quite a heavy downpour of rain to the White House and reviewed by the President. The men were enthusiastically greeted all along the line of march and many compliments upon their appearance were heard. The next morning, in spite of their long trip of the day before, and their march through the rain, every man of the detachment was reported well and present for duty.

A resolution giving the thanks of Congress to the officers and enlisted men of the First Marine Battalion was introduced on the last day but one before the adjournment of Congress, but failed to pass through lack of time.

The President recognized the services of the First Marine Battalion by advancing or brevetting a number of its officers, as follows:

Lieut. Col. R. W. Huntington, advanced one number and appointed colonel, for eminent and conspicuous conduct in battle.

Capt. George F. Elliott, advanced three numbers on the list of captains, for eminent and conspicuous conduct in battle.

Capt. Paul St. Clair Murphy, appointed major by brevet, for gallant service in the naval battle of July 3, off Santiago.

First Lieut. W. C. Neville, appointed captain by brevet, for conspicuous conduct in battle at Guantanamo, Cuba.

Second Lieut. Thomas S. Borden, appointed first lieutenant by brevet, for distinguished service in the naval battle at Santiago, Cuba.

Second Lieut. Louis J. Magill, appointed first lieutenant by brevet, for good judgment and gallantry in battle at Guantanamo. Appointed captain by brevet for good judgment and gallantry in battle at Guantanamo, Cuba.

Second Lieut. Philip M. Bannon, appointed first lieutenant by brevet, for distinguished conduct in battle at Guantanamo, Cuba.

A number of other officers of the battalion are entitled to recognition, and recommendations in their cases will be submitted to the board now in session at the Navy Department for the purpose of determining the officers entitled to advancement or brevets.

The fact that this battalion was attacked by overwhelming numbers, and for over three days and nights was under constant fire, and that the following day a portion of the battalion attacked and repulsed a superior force of Spaniards, shows that Colonel Huntington and his officers and men displayed great gallantry, and that all were well drilled and under the most effective discipline. The battalion has not lost a man by disease from the time it left for Cuba until its return, and the percentage of sickness was only 2 per cent, and in camp, after arrival at Portsmouth, only nine tenths of 1 per cent, showing the good results of the extremely careful and complete preparation of the battalion for the service which devolved upon it, by the quartermaster of the Corps, Maj. F. L. Denny, the quartermaster of the battalion, Capt. C. L. McCawley, U. S. M. C., the medical officer, Surg. John M. Edgar, U. S. N., and myself, in procuring all the necessary clothing, medicines, and other necessities for a tropical climate, and the care exercised by the officers for the health and comfort of the men, by the constant inspection of the camp, of provisions and meals before being served, as well as a rigid discipline always enforced in the Corps.

In order to organize this battalion, to furnish guards for the auxiliary ships, and to make the increases in the guards of the regular vessels requested by their commanding officers, it was necessary to very greatly deplete the strength of the shore stations of the Corps, leaving most of them in charge of noncommissioned officers, and in some instances with a strength of only six or seven men.

The naval appropriation act, approved May 4, 1898, appropriated for 473 additional men for the Marine Corps, thus bringing the Corps up to its full authorized strength, as provided for in section 1596 of the Revised Statutes, viz, 3,073 enlisted men.

The same act provided for a temporary addition to the strength of the Corps of 60 gunnery sergeants, 80 corporals, and 1,500 privates, for service during the war. The act provided that the gunnery sergeants should have the rank of first sergeant, but did not state that their pay should be \$35 per month, as estimated for, and therefore none were appointed.

During the war 57 vessels had marine guards, varying in strength from 80 down to 6 men, making a total of 2,055 enlisted men at sea. There were 623 in the battalion and 50 at Key West, making a total of 2,728. Deducting those on the Pacific coast, 275, this left only 71 enlisted men of the regular service available for duty at all the eastern posts.

Thus it will be seen that if the additional 473 men had not been appropriated for, the Corps would have been unable to meet the demands for men required for the guards on board ship and men for the battalion and at Key West, and even after these 473 men were added to the Corps, it is shown that there were but 71 men of the permanent establishment available for duty at the different posts, and therefore, if the 1,500 additional men for service during the war had not been provided, the Corps would have been unable to furnish adequate guards for the various navy-yards and stations, where millions of dollars worth of public property is stored, which required most watchful guarding, on account of the many Spanish emissaries in the country. As the men enlisted for the war became sufficiently drilled, some of them were distributed among the various marine guards on board ship, relieving older men for positions as noncommissioned officers at the different posts. In addition to the men required at the navy-yards, guards composed of selected men were ordered to be established at the magazines at Norfolk and Philadelphia, as attempts had been made by Spanish spies to blow them up.

The men enlisted for the war were required to pass the same physical examination as those enlisted for the permanent establishment, except a reduction of 1 inch in height and the extension of the age limit to 35 years, as it was not thought advisable to reduce the general standard. For this reason the enlistments were somewhat slow, and upon the cessation of hostilities enlistments were stopped.

This act of May 4 also provided for a number of additional officers for service during the war, to be appointed from civil life, and from worthy noncommissioned officers of the Corps. Under the act, 40 second lieutenants were appointed from civil life and 3 from noncommissioned officers. These officers were very much needed, as there were but 4 line officers on shore for service at all the Eastern posts, and many of the guards on board ships were without officers before the act was passed. The newly appointed officers were hurriedly drilled and otherwise prepared for duty as rapidly as possible, and distributed among the auxiliary cruisers, the various posts, and the First Marine Battalion.

A bill is now pending in Congress to reorganize and increase the efficiency of the Marine Corps, which provides for a number of additional officers, a certain number of which shall be appointed as now provided by law, and a certain proportion selected from officers who were appointed from civil life and served during the war, and from worthy noncommissioned officers of the Corps. Many of the second lieutenants who have been appointed for temporary service would make excellent officers for the permanent establishment, and will be eligible for appointment in case the bill referred to becomes a law.

In accordance with the order of the Secretary of the Navy, on account of the lawlessness in Key West of vicious persons congregating there as a result of the war, a number of men having been shot by desperate characters, a detachment, under command of Second Lieut. Henry C. Davis, consisting of 2 commissioned officers and 50 enlisted men, were sent from Washington to the naval base, Key West, Fla., for duty at that station. Capt. H. K. White was detached from the marine bat-

The President recognized the services of the First Marine Battalion by advancing or brevetting a number of its officers, as follows:

Lieut. Col. R. W. Huntington, advanced one number and appointed colonel, for eminent and conspicuous conduct in battle.

Capt. George F. Elliott, advanced three numbers on the list of captains, for eminent and conspicuous conduct in battle.

Capt. Paul St. Clair Murphy, appointed major by brevet, for gallant service in the naval battle of July 3, off Santiago.

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talion before it sailed for Cuba and placed in command. Previous to the arrival of this detachment, a company of men from the battalion had been detailed for duty at Key West. The detachment sent to Key West was fully equipped for field service, and a complete supply of camp equipage was shipped for the use of the men. A vacant building, formerly used as a cigar factory, was hired and fitted up in a comfortable manner for the use of the command. This guard remained at Key West and rendered efficient service until after the cessation of hostilities. On August 16 yellow fever made its appearance, and a number of cases developed. All possible precautions were taken to prevent the spread of the disease, and a separate building was hired for the use of the well men. In all, there were ten cases of fever, and no deaths. When it was deemed safe for the men to leave Key West, they were ordered North on the Ward Line steamer *Colorado*, leaving on September 8, and arriving at New York September 14. Upon their arrival at New York, not being detained at quarantine, they were immediately transferred to the marine barracks, Brooklyn. The mattresses and bedding of the men, at the suggestion of the Surgeon-General, were turned over to the naval hospital, New York, to be thoroughly fumigated.

The Department having decided to bring the Spanish prisoners captured in the naval battle of July 3 off Santiago to the navy-yard, Portsmouth, N. H., for imprisonment, a camp was established at the upper point of Seaveys Island, a very picturesque location on the banks of the river, overlooking many of the surrounding summer resorts, and quarters and other necessary buildings were erected by order of the Department for the use of the prisoners. Also a barracks, mess room, commanding officer's and officer of the day's offices, kitchen, and guard-house at main gate were erected for one company, which was posted at the camp during the time the prisoners were confined. The camp was inclosed by a high board fence, and outside of that, at a distance of 20 feet, by a high barbed-wire fence.

All the officers and men attached to the marine barracks, Portsmouth, being absent with the marine battalion in Cuba, on July 7 I ordered Col. James Forney, 4 officers, and 114 men to Portsmouth for duty. A short time before the prisoners arrived, in obedience to orders from the Department, I proceeded to Portsmouth to make all arrangements to establish the guard and to receive the prisoners. The camp was named Camp Long, in honor of the Secretary of the Navy.

On July 11, 10 officers and 692 men, Spanish prisoners were received from the *St. Louis*, and on July 16, 2 officers and 961 men were received from the *Harvard*; also, on August 24, 8 officers and 8 enlisted men, captured on the *Argonaut* at the beginning of the war, arrived from Fort McPherson, Ga., where they had been confined, making a total of 20 officers and 1,661 men. Capt. B. R. Russell, from the marine battalion, and Second Lieut. T. S. Borden and 28 marines from the *Brooklyn*, and the guard of the *Marblehead* came north with the first detachment of prisoners on the *St. Louis*, in addition to the regular guard of the ship, arriving at Portsmouth July 10; and Capt. A. C. Kelton and First Lieut. F. J. Moses and 60 men from the First Marine Battalion came north as a guard with the second detachment of prisoners on the *Harvard*, in addition to the guard of this vessel, arriving at Portsmouth July 15. Captain Russell, Second Lieutenant Borden, 28 men of the *Brooklyn's* guard, and Capt. A. C. Kelton, First Lieut. F. J. Moses, and 60 men from the battalion were transferred to the marine barracks, Portsmouth, N. H., after the arrival of the vessels, the *Marblehead's* guard returning on the *St. Louis*.

With the officers and men already at Portsmouth, this made a total of 8 officers and 220 men, who comprised the guard during the entire time the prisoners were confined. Four Gatling guns were placed in position on the hill overlooking the camp, and kept ready at all times, and two others were placed at the bridges leading from the navy-yard at Seaveys Island. Galleries and sentry boxes were built on the outside of the fence, giving the sentinels a view of the interior of the stockade at all times. An officer was detailed as officer of the day, one as officer of the guard, and one inside the prisoners' inclosure, and all arrangements were made to insure the security of the prisoners.

When these prisoners were landed they were dirty, many with scarcely any clothing, some in a feeble condition, and a number of them wounded. The first night they were on shore it was very cold, but it was so late when they landed that it was impossible to provide them with proper clothing. Not being accustomed to the climate, they were somewhat uncomfortable, although they had an excellent meal that night, provided by Paymaster J. P. Loomis, commissary. The next day they were supplied with sufficient warm clothing and bedding through the earnest efforts of Paymaster Loomis, and when I left their condition had very much improved.

On the occasion of my inspection of the marine barracks, Portsmouth, N. H., on September 2 and 3, I thoroughly inspected the camp and prisoners, with the commanding officer of the marine barracks, Lieutenant-Colonel Meade, who had a few days before relieved Colonel Forney, and could hardly realize the great improvement which had taken place in the condition of these men. The prisoners were drawn up in two lines in their respective barracks, and I inspected every prisoner in the camp. Most of them were dressed in white suits, all the clothing was very clean, and the men looked well and contented. Their bedding was opened and found to be clean and neat. I also inspected the grounds, barracks, sinks, kitchens, mess pavilion, and other buildings at the camp and found them clean and in a perfectly sanitary condition, showing that great care had been bestowed on the men and camp by Colonel Forney and Lieutenant-Colonel Meade as to health and comfort since they landed at Seaveys Island. After my return from Portsmouth, Maj. G. C. Reid, adjutant and inspector of the Corps, proceeded to Portsmouth, and made a thorough inspection of the battalion. I append his report, and respectfully request that it be printed as a part of my report.

Many of the prisoners having money and being desirous of purchasing tobacco, pipes, writing paper, postage stamps, and other articles for their comfort, the matter having been brought to my attention by Colonel Forney, I requested the Department to allow the post trader at the barracks to furnish for cash such articles, other than liquors, as they might desire. The Department granted the request, with a direction to supply articles at a moderate price, established by the council of administration. Tents were provided inside the stockade for the use of the post trader and the men allowed to purchase such articles as they wished. Appended is a report of Colonel Forney, inclosing a list of the prices of articles sold to the prisoners by the post trader. I respectfully request that this report and its inclosures be printed as a part of my report. The list of Spanish prisoners and list of deaths referred to in Colonel Forney's report, are on file at these headquarters.

Admiral Cervera and the other officers captured in the battle of July 3 off Santiago not confined at Portsmouth, were sent to Annapo-

lis, Md. All the marines having been taken away from that station and sent to the front, a guard, under command of Maj. W. S. Muse, consisting of 2 officers and 60 enlisted men, was reestablished for the purpose of guarding these prisoners and performing guard duty at the Academy. On September 8 the prisoners left the Academy and returned to their country. Many of the Spanish wounded in the battle of July 3 were sent to the naval hospital, Norfolk, Va., and a guard was established there and camped in the hospital grounds. This guard was maintained until the prisoners were discharged from the hospital and was then returned to the barracks.

For some time after the establishment of the new Navy it was a question whether or not it would be advisable to station marines at the rapid-fire and secondary batteries. I maintained that the men of the Corps could do this work, and do it well, as the marines are thoroughly trained as sharpshooters, and it has been demonstrated that a good marksman with the rifle is a good gunner, and, furthermore, many of the men are thoroughly drilled at the small guns before going on board ship. I accordingly urged that the marines should be given a trial at these guns. After due consideration the Department accepted my suggestion, and included in the regulations orders to station them at the secondary batteries and rapid-fire guns. By the reports received after the battle of the 3d of July, when the Spanish fleet off Santiago was annihilated, and the reports of the Spanish officers who were on board these ships, it was shown that the greatest damage on the enemy's vessels resulted from the fire of the secondary batteries and the rapid-fire guns, this fire being so effective that the enemy were driven from their guns. As a great number of these guns on the ships engaged were manned by marines, I feel safe in asserting that the Department did not make a mistake when it directed that the small guns should be manned by marines. I have received reports from many commanding officers of marine guards of ships which took a prominent part in this action, indorsed very favorably by the commanding officers of the vessels, showing the stations and services of the marines. Several of these reports are appended, and I request that they may be printed as a part of my report.

Owing to the occurrence of hostilities between this country and Spain, and the fact that nearly all the men have been at the front, the usual attention could not be given to target practice at the different posts, although great care has been taken in the instruction of recruits in gallery practice.

The very careful attention given to target practice in the past has shown excellent results during the war, and great attention will continue to be given to the subject as soon as the men are again stationed in barracks.

The result of the practice last year was so gratifying that I organized a team for the purpose of entering the contest at Seagirt, N. J., to contend for the "Hilton trophy." This team having made an average of 89.77 per cent at the distances required, 200, 500, and 600 yards, and the best average score ever made by a team (12 men) in competition for the trophy being $91\frac{1}{2}$, I felt that the marines would have a good chance of winning the trophy, and that I would be justified in giving them an opportunity to compete. The war being declared compelled me to send these men to the front, and the plan was abandoned.

After my last report, the marines stationed at Washington who could be spared were ordered into camp at the Ordway range of the District National Guard, in order to enable them to complete their long-range

practice. The results were very satisfactory, and a large number of the men qualified as sharpshooters and marksmen. This spring, before hostilities commenced, the men were again sent to camp at Ordway for long-range practice. Orders having been issued to form a battalion after they had been there but a short time, they were hurriedly directed to return to their posts for the purpose of joining the battalion, and were therefore unable to qualify for want of time.

I append a copy of the new instructions for target firing, issued from these headquarters on December 29, 1897, for the current season, which I request may be printed in connection with my report.

Owing to the opening of hostilities, the proceedings of the school of application at these headquarters were hurried to a conclusion, and it not being practicable to order a board of visitors, I have only the report of the commanding officer of the school, dated April 18, 1898, as to the standing of the officers and men under instruction, which is appended, and which I request may be printed with my report. It was impracticable to order the officers to the ordnance shop at the navy-yard, Washington, and the War College and Torpedo School at the United States naval training station, Newport, R. I., for instruction.

The practical instruction which many of the officers, noncommissioned officers, and privates obtained at the school of application and in camp at the rifle range at Ordway was very useful to them in Cuba in establishing the camp and throwing up intrenchments, etc., and it is my purpose, with the sanction of the Department, to have a yearly encampment for at least one month at Seaveys Island, Portsmouth, N. H., where the officers and men can be thoroughly instructed in camp life. A few could be taken from each post, for the length of time required, without materially weakening the strength of the commands at the navy-yards. These men could be gathered up by one of the vessels of the Navy, and sent to the place of encampment without great expense, and it is thought that the benefit derived from this practical experience in camp by the officers and men would be of inestimable value to the service.

The marine battalion in Cuba was armed with the Lee straight-pull 6-millimeter rifle. Col. R. W. Huntington, who commanded the battalion, states concerning this arm: "The Lee straight-pull rifle has a few defects, which, I am informed, have been corrected. If this is the case the Lee will be a very superior military arm." Attention is invited to the remarks contained in the appended report of the adjutant and inspector relating to this rifle.

The discipline and instruction of the Marine Corps have been maintained at a high standard, and to this is attributed in a large measure the efficiency of the services rendered by the marines in the war between the United States and Spain. One of the instances of discipline connected with the war, which attracted public attention, was the conduct of Private William Anthony in performing the very letter of his duty as orderly on the occasion of the destruction of the battle ship *Maine* in Havana Harbor by going below to the captain's cabin, irrespective of danger, and informing him that the ship had been blown up and was sinking. For his action on this occasion Private Anthony received commendatory letters from Capt. C. D. Sigsbee, of the *Maine*, and the Secretary of the Navy, and was promoted to the rank of sergeant by myself. The letters mentioned are appended, and I request that they be printed with this report.

With the view of encouraging the enlisted men of the Corps to save their money in order that they might have a little sum to start with

should they desire to leave the service at the expiration of their enlistment, I renew the recommendation contained in my last report that the act of Congress approved February 9, 1889, entitled "An act to provide for the deposits of the savings of seamen of the United States Navy," be made applicable to the Marine Corps, and that the necessary legislation be enacted for this purpose.

I also renew the recommendation contained in my last report that provision be made for 16 quartermaster-sergeants, to be detailed at the different posts and in the offices of the two assistant quartermasters. The necessity for these sergeants is even more urgent now than heretofore, as the Corps has been increased about 20 per cent in strength. The present system of detailing a sergeant to perform the work which should properly be performed by quartermaster-sergeants is very unsatisfactory, as with the comparatively small number of noncommissioned officers now in the Corps it is frequently necessary, in providing guards for ships, etc., to order the sergeants away from the posts just as they become thoroughly acquainted with the work of keeping accounts, making returns, etc., thus necessitating the instruction of another man in the duties, who is likely to be removed before he becomes proficient in their performance or soon after he becomes thoroughly familiar with the work. This necessarily causes much confusion in the keeping of accounts and many delays in the preparation and forwarding of papers, and makes it necessary for the commanding officer to attend to the details of this work himself, thus keeping him away from other more important duties. All this inconvenience would be obviated if provision were made for regular quartermaster-sergeants, who would become thoroughly familiar with the work required of them and remain constantly at one post, thus insuring much greater accuracy and expedition in the preparation of papers and rendition of returns, etc. These quartermaster-sergeants, if provided for, would receive the same pay as the one now in the Corps, which would be a just reward for the old and faithful men who would be selected for the positions, and would be an inducement for useful men to remain in the service.

Although the corps has been restored to its statutory strength of 3,073 men, it seems certain that the demands which will probably be made upon it in the near future for foreign service, growing out of the present war, and on account of the growth of the Navy, will be greater than can be met by the corps with its present strength, and it is submitted that its enlisted strength should be increased by at least 1,000 men.

The necessity for a rearrangement of grades and an increase of the number of the officers is constantly growing more imperative. A bill providing for the reorganization of the corps and a slight increase in the number of officers, which has been approved by the Department, is now before the Committee on Naval Affairs of the House of Representatives. This bill was drawn up before war was declared and when there was apparently no prospect of a large increase in the Navy. With the proposed increase of the Navy and the resulting additional duties for officers of the corps, while the bill will relieve the pressure somewhat it will not provide a sufficient number of officers to meet the demands which will almost certainly be made in the near future.

As stated elsewhere in this report, 43 second lieutenants have been appointed under the authority contained in the act approved May 4, 1898, and their services have been of much value during the war. As these appointments are only temporary, being limited by the act to the

emergency under which they were provided for, these officers will soon have to be mustered out, which will not leave enough officers to perform the required duties at the various posts and on the ships now in commission, and will leave none available for any additional ships which may be placed in commission or for any other duty which might be required.

The duty the officers are now performing at the posts of the corps requires an immediate increase of numbers, and the mustering out of the temporary officers at present in the service will make the duty on the regular officers extremely rigorous, requiring them to perform duty day on and day off at many of the posts, which should not be the case in any service.

This bill provides the rank of brigadier-general for the commandant of the corps. The authorized strength of the Marine Corps is at this time 116 officers and 4,700 men. There is no service in the world, except the Marine Corps, where a colonel has command of this number of men. The peace strength of the corps is over 3,000 men, which is an appropriate command for a brigadier-general. It is further submitted that the Marine Corps, as one of the coordinate military branches of the Government, is entitled to have as its head a brigadier-general, thus placing the commandant on an equality in this respect with the corresponding rank held by the heads of departments in the Army and bureaus of the Navy.

Post exchanges are now in operation at the following named barracks: League Island, Pa.; Norfolk, Va.; Boston, Mass.; Port Royal, S. C.; Annapolis, Md., and at Puget Sound, Bremerton, Wash. As nearly all the troops were taken from the posts for active service during the war, no definite conclusion as to the result of this experiment in the Marine Corps can be arrived at at the present time.

It gives me pleasure to mention the fact that, notwithstanding the great increase in the strength of the corps, it being almost double its strength at the commencement of the war, and the consequent large increase of work in all departments, without any addition in the clerical force, the paymaster, adjutant and inspector, and quartermaster have rendered all assistance possible in every emergency, and have promptly and efficiently transacted all the business of their respective departments, the work having been at all times kept up to date. The great number of men enlisted in a short period of time at the beginning of the war devolved upon the Quartermaster's Department the duty of procuring material and manufacturing large quantities of clothing of all kinds, as well as the procuring of other supplies of various sorts, at very short notice. All of this work was performed in the most satisfactory manner, and the Department met all the demands made upon it without any delay. When orders were received to assemble the battalion at New York, it was necessary to procure large quantities of clothing, equipments, and various other stores for the use of the battalion in the tropics, and there were but four days in which to collect all the articles at New York, many of which had to be obtained from manufacturers and dealers at a considerable distance. By the energetic work of the quartermaster of the Corps, Maj. F. L. Denny, all the articles required arrived in ample time to be placed on board the *Panther* before the battalion sailed. The only increase made in the usual force was the employment of a few extra cutters and operatives, who were absolutely necessary. I append the reports of the adjutant and inspector, quartermaster, and assistant quartermasters, and request that they may be printed in connection with my report.

The 11th of July, 1898, was the centennial of the Marine Corps as an organization. On the 8th of June, 1775, the Continental Congress provided for the formation of two battalions of marines, "consisting of one colonel, two lieutenant colonels, two majors, and other officers as usual in other regiments * * * and that particular care be taken that no person be appointed to officers or enlisted into said battalions but such as are good seamen, or so acquainted with maritime affairs as to be able to serve to advantage by sea when required; that they be enlisted and commissioned to serve for and during the present war with Great Britain and the Colonies, unless dismissed by order of Congress; that they be distinguished by the names of the First and Second Battalions of American Marines." On the 11th of July, 1798, an act was approved "for the establishing and organizing a 'Marine Corps,'" and thus the organization has been in existence as a corps one hundred years, and marines have been a part of the naval service for one hundred and twenty-three years. The Department invited the attention of the service to the centennial of the corps by the following order:

NAVY DEPARTMENT,
Washington, D. C., July 30, 1898.

General Order No. 494.

On the 11th day of the present month the United States Marine Corps, which has been a part of the naval establishment of the Government for one hundred and twenty three years, completed the one hundredth year of its existence as a corps. During this period the many occasions on which it has received the thanks of Congress for distinguished conduct in conflict with the enemy, and the numerous other instances in which its duties have been performed in such a manner as to bring it prominently into notice, have served to impress upon the public, and especially upon the naval service, the great worth of the corps. This order is issued in recognition of the centennial anniversary of this important and useful arm of the Government, which, occurring as it does in the midst of the war with Spain, and at a time when the Marine Corps has added new glory to its already gallant record, affords the Department an added pleasure in announcing this anniversary to the service.

JOHN D. LONG, *Secretary.*

The following casualties have occurred since the date of my last report: Retired, Maj. Henry A. Bartlett, February 1, 1898; Col. John H. Higbee, June 1, 1898. These officers were retired on their own application, having served over thirty years. Death, Lieut. Col. John L. Broome, retired, April 12, 1898.

Since my last report one second lieutenant, Ralph E. Walker, has been appointed to the Corps from the Naval Academy and will be sent to the school of application at these headquarters for instruction.

There have been since my last report 1,139 casualties in the enlisted strength, caused by discharges, desertions, deaths, and retirements, and in the same time there have been 1,817 enlistments and reenlistments.

The same strict recruiting regulations in force last year have been continued this year, with the exception that the authorized minimum height of men enlisted for the war was reduced 1 inch, and the age limit increased to 35 years, and an excellent class of men have been obtained. There are now 484 aliens in the Corps, and of these 179 have declared their intention to become citizens of the United States; 302 live in the United States but have not declared their intention to become citizens, and only 3 claim foreign residence.

There are 1,898 men on duty at the various shore stations and 1,678 on board ships in commission.

In accordance with the Department's instructions of July 11, 1898, the annual estimates for the support of the Marine Corps for the fiscal year ending June 30, 1900, were forwarded to the Department on August 30.

Triplicate copies of the paymaster's and quartermaster's estimates are inclosed herewith.

The adjutant and inspector has made inspections in accordance with article 932 (2), Navy Regulations, and reports the discipline and efficiency of the men as most satisfactory, and the general condition of the buildings as excellent.

During the year good-conduct medals have been awarded under article 930, Navy Regulations, 1896, to such enlisted men as were recommended therefor by a board of officers ordered in accordance with Special Orders, No. 49, Navy Department, July 20, 1896. The medals are greatly appreciated by the men, and are worn by them with much pride.

I respectfully invite attention to the following extract from my report of last year:

As the civil force at these headquarters has, by Executive order, been recently placed under civil-service rules, I respectfully recommend a rearrangement of salaries to correspond with those received by clerks in the other Departments of the Government performing like duties. The chief clerks of the various offices should be fourth-class clerks and receive the same pay allowed the chief clerks of the various offices in the Departments; and the second and third clerks employed here should be third and second class clerks, respectively. The sums received now by these men are odd in figures, being established many years ago, and are unlike those in any other Department.

The civil force here is very small compared to the work to be performed, owing to the employment of enlisted men as clerks and messengers; and in that way a considerable saving annually results to the Government, there being twelve of these soldiers so detailed.

The plan proposed will be an increase of only \$1,573.80—about the pay of one additional clerk—and in my judgment will be a fitting reward for deserving men who have at present little chance for advancement, which is discouraging to anyone who efficiently performs his duties.

The clerical force here has cheerfully and efficiently transacted the vast amount of work incident to the war, frequently remaining at the offices until late at night when necessary, and I respectfully renew my recommendation for the rearrangement of the grades above referred to.

I inclose herewith an abstract and schedule of proposals received for furnishing rations, fuel, and other annual supplies for the Marine Corps during the present fiscal year, and it is requested that this may also be made a part of my report.

Very respectfully,

CHARLES HEYWOOD,
Colonel Commandant.

The SECRETARY OF THE NAVY.

REPORT OF COMMANDING OFFICER FIRST MARINE BATTALION.

U. S. S. PANTHER,
Key West, Fla., April 30, 1898.

SIR: I have the honor to make the following report:

Before leaving New York on the 22d instant the force placed under my command was divided into five companies of infantry and one of artillery, the battery of artillery consisting of four 3-inch B. L. R. of the latest navy pattern.

The battalion marched aboard the transport *Panther* at 6.15 p. m. on that date, and sailed for Fort Monroe at 7.30 p. m., the departure being marked by intense enthusiasm in the navy-yard, docks, harbor front, and shipping of New York and Brooklyn.

At 8 p. m. on the 23d the ship anchored at Fort Monroe to await orders. Maj. P. C. Pope and First Lieut. J. E. Mahoney joined the battalion, reporting on board soon after the *Panther* dropped anchor.

At 8.05 a. m. on the 26th instant this ship sailed from Fort Monroe, under convoy of the U. S. S. *Montgomery*, and arrived at Key West at 11 a. m. on the 29th.

At the request of the commanding officer of the ship, six men were detailed for signal duty, and they have satisfactorily received and transmitted all signals and messages.

One-half of the lifeboat's crew each night was composed of men detailed from the battalion.

Two boat's crews were likewise detailed each day, and they have performed this duty in a creditable manner, and an anchor watch of 50 men has been on duty nightly.

Two privates are now on the sick list with pneumonia, and one, Private Edward A. Donahue, fell off the "Jacob's ladder" at the stern of the ship in this port and sustained a fracture of the lower end right outer malleolus. This occurred at 5 p. m. on the 29th, and at 7 p. m. he was removed to the United States army hospital at this port.

The men of this command have been frequently and carefully instructed and drilled to such an extent as the limited facilities of the ship would permit; and on the 26th instant, each of the six companies was practically instructed in loadings and firings at sea, each man firing ten rounds; and the battery of artillery received similar practical instruction, one round being fired from each gun.

The mechanism of the new rifle worked fairly well.

The accouterments have been marked in black, with the letter of the company and each man's company number.

Very respectfully,

R. W. HUNTINGTON,
Lieutenant-Colonel, United States Marine Corps,
Commanding First Battalion.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,
Headquarters, Washington, D. C.

HEADQUARTERS FIRST BATTALION,
Camp Sampson, Key West, Fla., May 25, 1898.

SIR: In obedience to your telegram of the 25th instant, I respectfully report that the battalion under my command was sent ashore from the *Panther* on the 24th instant, the order to this effect having been received about 5.30 p. m. on the 23d instant, this order being to land the battalion at 3 a. m.

We had permission to get out such stores as we could before 3 a. m. There was considerable delay in procuring the first lighter, and, it having been loaded, there was considerable more delay in getting the ship alongside the wharf. The ship was put alongside about 9.30 p. m.

Owing to my representations, Commodore Remey, commanding the base, extended the time allowed to take stores out and get out of the ship until the *Amphitrite*, which the *Panther* was to tow, should be ready to sail.

Subsequently I received orders from Commander Reiter that the battalion would leave the ship at 4.15 a. m. It was necessary to knock off work at 3.45 a. m. in order that the men might get ready to go ashore.

I was ordered by Commander Reiter, against my earnest plea, to leave on board the *Panther* one-half of our 6-millimeter ammunition (225,000 rounds) and one-half of the 3-inch ammunition (18 boxes), the *Panther* having two 3-inch guns and we having four. This 6-millimeter ammunition was retained, Commander Reiter informed me, to serve as ballast, as the *Panther* has no 6-millimeter rifles. This ammunition weighed about 14,000 pounds, and was stowed aft.

Commodore Remey modified this order so that we were able to take our 6-millimeter ammunition, but Commander Reiter retained one-half of the 3-inch.

Owing to the short time allowed for the removal of the stores, and notwithstanding the fact that the men worked hard and worked fast, considerable quantities of our property and part of the ten days' rations I requested were left on board.

Lieutenant Draper was present a part of the time when the matter of sending the battalion on shore was debated between Commodores Remey and Watson and Commander Reiter, and from his report of this conversation I am convinced that the order for the transfer of the battalion, and partially the extreme hurry in getting out of the ship, was due to the earnest solicitation and representations of Commander Reiter.

The battalion moved from the ship shortly after 4.15 a. m., and moved out to the beach, short 2 miles from the wharf, and after we had been there some time the *Panther* came out of the harbor and apparently lay to in the offing about two and one-half hours, waiting for the *Amphitrite*.

The *Saturn* was available for the service assigned the *Panther* and has much greater towing power, and was fitted for towing until her steel towing hawser was ripped out for the *Panther*.

The battalion is now strung out in camp along the beach for over half a mile.

About May 10 Commander Reiter attempted to get the battalion on shore, and an order was issued to that effect. I addressed a letter (copy annexed) to the commandant of the station against this transfer and the order was revoked. The same reasons that I then urged against the transfer held good on the 23d instant. In referring to this letter I find the expense for water is greater and for wood it is less than I had estimated. The expense for transportation is also greater than I had estimated.

The quartermaster has been compelled to hire a storehouse for the protection and preservation of the stores.

The battalion is established in camp, and the sick list shows a decided increase this morning, owing in part to the sun, heat, and exposure.

The usual routine of camp has been established, and a guard of 33 men and an officer has been sent into Key West for the protection of public property at the naval station, by order of the commandant of the base, this to continue daily.

Cooked meats have to be sent to these men, the transportation of which is paid by the Marine Corps.

Six men are on duty, two at a time, as orderlies for the commandant, from 8 a. m. to 10 p. m. daily.

I have no objection to these details except that the men are necessarily absent from their drill and from their places in squads and companies, and their military instruction at the present juncture is of great importance.

I think that, notwithstanding the annoyance, trouble, and expense this transfer has caused, the experience will be of some value to the battalion.

Very respectfully,

R. W. HUNTINGTON,
Lieutenant-Colonel, United States Marine Corps,
Commanding Battalion.

The COLONEL COMMANDANT, UNITED STATES MARINE CORPS,
Headquarters, Washington, D. C.

U. S. S. PANTHER,
Key West, May 10, 1898.

SIR: I respectfully submit that it is not desirable to move the marine battalion from this ship into camp for the following reasons:

There is no good ground for encampment. Supplying water to the camp for cooking and drinking will be difficult and involve considerable expense. The same can be said relative to the supply of commissary stores and fuel. We should use 5 cords of wood a day, costing in town \$8 a cord. The hauling of tents and camp equipage from the camp—the place best adapted is a mile and three-quarters from the wharf—will cause, I estimate, two days delay. The men will be more uncomfortable and under less healthy conditions than they are on board ship. Venereal disease is rife in Key West.

The advent of the rainy season emphasizes the above reasons. I think our camping place in heavy rains will be standing water.

The men at the present time are going ashore and being exercised and are healthy, the sick list being about 1 per cent.

Very respectfully,

R. W. HUNTINGTON,
Lieutenant-Colonel, United States Marine Corps,
Commanding Battalion.

The COMMANDING OFFICER,
Naval Station, Key West.

HEADQUARTERS FIRST MARINE BATTALION,
Guantanamo Bay, Cuba, June 17, 1898.

SIR: I have the honor to make the following report: The stores of this battalion were sent to the dock at Key West from Camp Sampson on Sunday, June 5. We broke camp at 2 a. m. on June 6, and went on board the *Panther*, Major Pope going to Key West hospital.

On June 7 at 7.10 p. m. we sailed from Key West and arrived off Santiago de Cuba on the morning of the 10th; on the same day, at 1 p. m., we arrived in Guantanamo Bay; at 2 p. m. the battalion landed with stores. Company C was landed and deployed up the hill near the beach on the right of the entrance to the harbor. This hill is about 150 feet high and on top was formerly occupied by the Spanish troops,

but when the position was vacated, the day before our landing, the blockhouse on top of the hill was burned.

On the landing all houses and huts lately occupied by the Spanish forces were burned.

The hill occupied by us is a faulty position, but the best to be had at this point. The ridge slopes downward and to the rear from the bay; the space at the top is very small, and all the surrounding country is covered with thick and almost impenetrable brush. The position is commanded by a mountain, the ridge of which is about 1,200 yards to the rear.

On the afternoon of landing, tents were pitched and outposts established.

On the 11th, about 5 p. m., an attack was made upon one of the outposts, and two privates, McColgan and Dumphy, of Company D, were killed, each receiving more than eight wounds, each of which would have caused death. These two men were patrols. A detachment was sent out from camp to support the outpost, and we found only faint traces of the enemy. After nightfall fire was opened upon our camp by small parties from different directions on five different occasions. The men turned out each time under arms with promptitude and courage. About 1 a. m. a more combined attack was made, and noisy fire from south, southeast, and southwest, was opened. During this attack Acting Assistant Surgeon John Blair Gibbs, United States Navy, was killed. From the best information attainable about 160 men were engaged in this attack.

On the morning of the 12th Sergeant C. H. Smith was killed and Corporal Glass, Privates McGowan and Dalton, all of Company D, were wounded—not dangerously.

On the morning of the 12th all tents and material were removed from the position and taken on the bay side of the hill, and a trench was dug on the south front, about 40 yards across, and a barricade made around the position, which would enable us to hold it, as I was informed that more troops were being assembled by the enemy in this immediate vicinity.

On the night of the 12th many persistent and trifling attacks were made, in reply to which we used a good deal of ammunition. About 2 a. m. Sergt. Maj. Henry Good was killed. On the 12th we were joined by 60 insurgent troops, and they, being acquainted with the country, and excellent woodsmen and fearless, were of the greatest assistance.

On the 13th, about 8 a. m., fire was opened upon the camp and subdued without loss or difficulty. About 8 a. m. of the 14th a rather smart fire was opened for a few moments on the camp and easily repelled. About 20 Cubans came from below the hill at this alarm, but their help was not needed. They opened fire.

At 9 a. m., 14th, a force consisting of Companies C and D, the native troops above mentioned, with about 25 more from Guantanamo, all under the direction of Colonel Tomas, Cuban army, proceeded through the hills about 6 miles and destroyed a well, said to be the only available water supply within 9 miles.

From the best information I can gather, this force was opposed by four regular companies of Spanish infantry and two companies of guerrillas, making a total of a little short of 500 men.

The engagement between these forces lasted from about 11 a. m. until 3.30 p. m. Our troops drove the enemy at every point, being obliged to make the first advance under fire, which, owing to the lay of the country, they could not return.

Captain Elliott reports that the men in many cases coolly estimated distances, borrowed his field glass to pick up parties of the enemy, and at a distance of 1,000 yards often inflicted damage and caused withdrawal.

Second Lieutenant Magill, with 50 men and 10 Cubans, joined Captain Elliott, climbing the mountain through cactus and brush; this advance was intended to cut off the retreat of the Spaniards, which unfortunately failed of its principal object, owing to the fact that his advance was stopped by the fire of the U. S. S. *Dolphin*.

Being apprehensive for the success of the movement, I ordered First Lieutenant Mahoney to be joined by First Lieutenant Ingate—these officers each having 50 men with them on picket—this combined force to proceed to Captain Elliott's assistance. Lieutenant Ingate failed to find his way to Lieutenant Mahoney, and Lieutenant Mahoney advanced alone, arriving too late to take an active part in the affair.

Our losses were 2 Cubans killed, 2 wounded, and 3 privates wounded, not dangerously; after the affair, while descending the mountain, Lieutenant Neville wrenched his hip and will probably be unfit for service for a month; about 10 or 12 of our men and 2 Cubans were overcome by the heat.

From information received from prisoners, which I believe to be reliable, about 60 of the Spanish force were killed and something more than 150 wounded, and 1 lieutenant and 17 privates were captured. The forces returned to camp at 8 p. m., exhausted by the long, hard march through this mountainous and tropical country.

This affair was planned by the Cubans, but too much praise can not be awarded to the coolness, skill, and bravery of our officers and men, by which alone its success was achieved.

Captain Elliott's cool advance up a rocky, steep mountain path, under fire for twenty minutes without being able to return it, and the gallantry and skill displayed by him throughout this affair were essential to the great success attained by the expedition, and are worthy of and I earnestly recommend that he be advanced in rank one grade. Captain Elliott mentions, in terms of high praise, the conduct of First Lieutenants Lucas and Neville, and Second Lieutenants McGill and Egan. Your attention is called to a report made by Captain Elliott, attached hereto.

Very respectfully,

R. W. HUNTINGTON,
*Firstment-Admiral, United States Marine Corps,
Commanding First Battalion.*

Colonel Commandant CHARLES KEYWOOD,
United States Marine Corps, Headquarters, Washington, D. C.

[First indorsement.]

U. S. S. MARBLEHEAD, third rate,
June 17, 1898.

Respectfully referred to the commander in chief.

This report requires several corrections.

The blockhouse referred to on page 2 was burned by the gun fire from the *Panther* on the 7th instant.

The position referred to on the same page was not occupied again after a small Spanish force had been driven away, when the *Marblehead* took permanent possession of the bay on the 8th instant.

Early on the morning of the 10th instant Captain Goodrell, with 40 marines from the *Oregon* and 20 marines from the *Marblehead*, examined the locality occupied by the marines, who arrived shortly after he had completed this duty. On the arrival of the *Panther* Captain Goodrell was sent on board to give Colonel Huntington the benefit of his observations.

Referring to paragraph 4, page 2, the position occupied by the marines has been pronounced by Major-General Perez, of the Cuban army, on the 17th instant, to be the only tenable position on the bay which could be successfully held by a small force. He also stated that 5,000 Spaniards could not take it.

If the marine position is commanded by a mountain ridge, that mountain ridge is commanded in turn by the ten 5-inch rapid-fire guns of the *Marblehead*, and of such other ships as may be here.

The mistake of locating the camp between the main position and the outpost was corrected on the 11th instant, at my suggestion.

The expedition was suggested by Colonel La Borde, and the *Dolphin* was sent to cover the sea front of our force.

Twenty-three marines overcome by the heat were brought back by the *Dolphin*.

This exhaustion was due, I believe, mainly to the fact that the campaign hats of the marines were on the *Resolute*, and not in the marine camp.

The behavior of the officers and men of the Marine Battalion generally has been most gallant, and is in general worthy of all praise.

Very respectfully,

B. H. MCCALLA,
Commander, United States Navy, Commanding.

[Second indorsement.]

U. S. FLAGSHIP NEW YORK,
Off Santiago de Cuba, June 20, 1898.

Respectfully referred to the Secretary of the Navy.

W. T. SAMPSON,
*Rear-Admiral, Commander in Chief U. S. Naval Force,
North Atlantic Station.*

HEADQUARTERS FIRST MARINE BATTALION,
Playa del Este, Cuba, July 31, 1898.

SIR: I have the honor to make the following report: After the action of June 14 the enemy retreated farther up country and has never since annoyed us.

On June 25, at 3 a. m., Companies C and E and about 40 Cubans, under my command, crossed to the west side of Guantanamo Bay in small boats for the purpose of cutting off a body of the enemy who had been annoying small boats from the *Marblehead* in their search for mines. A landing was made and the troops disposed to cut off any retreat of the enemy on the point, while the *Marblehead* watched the isthmus leading from the mainland to our position.

A heavy patrol was then sent to search the point, but none of the enemy were found, although unmistakable signs showed that a force of 100 or 150 had occupied this point a day or two before.

This force reembarked at 7.30 a. m. and returned to the camp.

The regular pickets have been maintained—15 men by day and a full company with all its officers by night. This line of observation is about 800 yards to a mile from our position. One-half of this line—the left—is the same as that established on the 10th day of June, when we first landed. The right half of this line has been drawn back to easier supporting distance.

Sentries on each face of the fortified position occupied by us are maintained, but I have reduced these materially from the number which were kept on duty from the 10th to the 30th of June, inclusive.

Strong scouting parties, in addition to those sent out by the Cubans, have been sent out frequently to examine the surrounding country for the enemy.

During the past few days water has been reported in the well at Cuzco which was filled up by our force after the affair on the 14th ultimo, as reported to you in my communication of June 17, but inasmuch as rations have been sent from here to the Spaniards in Caimanara it does not seem necessary to fill up the well, but it is being closely observed by scouting parties from this camp.

The graves of our dead have been appropriately marked with headstones and a record placed in a bottle beneath the headstone in each case.

The strength of the battalion at this date is 515. Of this number 23 are commissioned and 482 enlisted; deducting 21 sick, leaves 484 available.

Your attention is invited to the reduction in the strength of the battalion as shown by the muster rolls forwarded herewith.

Very respectfully,

R. W. HUNTINGTON,
Lieutenant-Colonel, U. S. Marine Corps, Commanding Battalion.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,
Headquarters, Washington, D. C.

HEADQUARTERS FIRST MARINE BATTALION,
Navy-Yard, Portsmouth, N. H., August 26, 1898.

SIR: I respectfully report that from the date of my last report, July 31, up to August 5, the battalion remained in camp at Playa del Este.

On the latter date we embarked on board the U. S. S. *Resolute*, and on the 9th instant sailed, under convoy of the U. S. S. *Newark*, bound for the Isle of Pines.

In an interview with the commander in chief before our departure, I asked if there was any military information available for my use there, and was told by him that there was a paper of which a copy should be sent to me.

This paper proved to contain certain general information relative to the island and the approaches to it. I had no information as to whether there was a hostile force in any part of the island.

The available draft of water at the principal port was, according to the above-mentioned paper, 6 or 7 feet; as the *Suwanee* drew 8½, and was the lightest draft of any vessel in the expedition, I suggested to Capt. C. F. Goodrich, who was in command, the great desirability of the addition of the *Maniti*, a captured tug drawing 4 feet, to his force, and by his direction and in his name applied to the chief of staff of the fleet for her.

My application was very positively and somewhat contemptuously denied, and I was told by him that the *Suwanee* could go anywhere, as she drew 8 feet.

By the chart 18 feet could be carried just into the Bay of Seguranca, but the *Newark* drew 21 feet and the *Resolute* 18½. Two fathoms are marked on the chart several miles—8 or 10—from shore in the bay; the *Hist*, *Osceola*, and *Wompatuck* all drew more water than this.

Information received off Cape Cruz by Captain Goodrich induced him to resolve to demand the surrender of Manzanillo. I append herewith a copy of a report of Captain Goodrich, giving the details of his action under this resolve.

On the 14th instant the *Resolute*, with the battalion on board, sailed for Playa del Este.

On the 18th instant the *Resolute*, having taken on board certain officers and men of the United States artillery, sailed for Montauk Point, at which place she arrived on the 23d instant, and, having disembarked the detachment belonging to the Army, proceeded to this place, where the battalion disembarked.

This report completes the history of the service for which the battalion was collected.

From May 24 to June 7 the battalion was in camp at Key West, and during this time—just previous to our departure for Cuba—diarrhea was very prevalent. The camping ground in Key West is bad and the water is bad.

Notwithstanding this, the battalion disembarked at Playa del Este in good condition, and during our stay there the sick list was at no time large. The gradual deterioration of the battalion was, however, clearly marked. The men seemed willing to work, but tasks that were comparatively easy at first became hard. The men seemed to have no reserve supply of strength, and, I doubt not, would during the last month of our stay there have yielded easily to any disease.

Campaign suits.—The material is not suitable, the color after washing being nearly as distinct as white at night, and not offering enough resistance to dews; and the cut is not desirable. The coat is too tight in the chest and back, and it should have more and larger pockets. These suits were, however, a great boon to officers and men during the scorching days.

Cartridge belts.—I respectfully recommend that the color of these belts be changed to that of the leggings or to conform to the color that may be selected for campaign suits.

Leggings.—These should be cut longer and, in my opinion, should be bound with leather, and fitted with rawhide laces.

Campaign hats.—The material of which they are made is very poor, and this kind of headgear is unsuitable for a very hot climate, as it is heavy and warm.

Shoes.—Those of the new issue, after hard wear, have proven very satisfactory.

Buzzicott cookers.—These have given entire satisfaction.

The Lee straight-pull rifle has a few defects which, I have been informed, have been corrected. If this is the case, the Lee will be a very superior military arm.

I have also to recommend that canister be issued with the 3-inch navy rifle. The only ammunition issued to the battalion for these pieces was shrapnel, and it was very difficult to explode this projectile, with any certainty, at short ranges.

Water.—The battalion at Playa del Este was subjected to frequent inconvenience and discomfort owing to lack of fresh water.

Underclothing.—The so-called light-weight underclothes would be much better if they were lighter in weight.

After the *Resolute* had gotten under way for Manzanillo I received a telegraphic order from you to make recommendations for brevets of officers who were deserving of that honor.

In obedience to that order I have the honor to renew the recommendation made in my letter of June 17, 1898, in reference to Capt. George F. Elliott.

I also recommend that the following-named officers receive brevets of the next higher grade, viz: Capt. A. C. Kelton, First Lieuts. C. G. Long, A. S. McLemore, and W. N. McKelvy for gallant conduct on June 11, 12, and 13; also First Lieuts. L. C. Lucas and W. C. Neville, and Second Lieuts. J. J. Magill, M. J. Shaw, and P. M. Bannon for gallant conduct on June 11, 12, and 13, in the various attacks upon our position, and on the 14th for gallant conduct in our attack on the Spaniards, which resulted in their utter discomfiture.

First Lieut. James E. Mahoney succeeded to the command of Company E by the detachment of Capt. H. K. White at Key West; although Lieutenant Mahoney was not the senior lieutenant of the battalion, and as such entitled to succeed to this vacancy, the fact that I had received information from you that Captain Goodrell had been ordered to the battalion and my unwillingness to sever the association already formed between company officers and men led me to continue him in command of Company E.

This company was the last formed of the battalion; it was formed from recruits and from men who had been rejected for Company C, and under Lieutenant Mahoney, and owing to him, its efficiency increased remarkably. From regarding it as the worst company in the battalion I came to look upon it as among the best.

On the 11th, 12th, and 13th of June, Lieutenant Mahoney's coolness under fire and the excellent example he set for his men were conspicuous.

Lieutenant Mahoney's prompt and soldierly action, as set forth in my report of June 17, is deserving of high praise.

While under my command he has shown no tendency to commit the fault for which he was tried; and, deeming it for the best interests of the Government that he should receive promotion as soon as possible, I recommend that he be now advanced two numbers, so as to be placed in his original position upon the list, and also that he be brevetted captain.

From the time of the organization of the battalion to the present Lieutenant Draper, the adjutant of the battalion, has been untiring in assisting me. His duties have been performed with zeal and discretion. On June 11, 12, and 13 his conduct was marked by imperturbable coolness and courage, and I most heartily recommend that he be brevetted captain for his services on those days.

I have nothing but praise to award Capt. C. L. McCawley, A. Q. M., for the manner in which his duties have been performed, often under very trying circumstances. He has never seemed to consider his own ease in comparison with the service, and this means a great deal when the climate of Cuba is considered. During the various

attacks on our position on June 11, 12, and 13 he was, a great part of the time, with me, and his deportment was becoming to a soldier. He acted often on those days as aid. I recommend that he be brevetted to the grade of major for gallant conduct.

I also recommend to the most favorable consideration of the Department Surg. John M. Edgar, U. S. N., for zealous and faithful performance of his duties under fire on June 11, 12, and 13.

Very respectfully,

R. W. HUNTINGTON,
Lieutenant-Colonel, United States Marine Corps,
Commanding First Battalion.

The COLONEL COMMANDANT, UNITED STATES MARINE CORPS,
Headquarters, Washington, D. C.

U. S. S. NEWARK,
Off Manzanillo, Cuba, August 13, 1898.

SIR: I have the honor to submit the following report of the movements and operations of this vessel and her consorts up to 8 o'clock this morning:

On the afternoon of the 9th the *Newark* left Guantanamo and was joined shortly after off the entrance to that port by the U. S. S. *Resolute*, carrying the battalion of marines under Colonel Huntington. We proceeded to Santiago de Cuba, where we communicated with the *St. Louis*, and then continued to the westward. On Wednesday afternoon, the 10th instant, we fell in with the *Hist* and *Suwanee* off Cape Cruz. Lieutenant-Commander Delahanty, of the *Suwanee*, having preceded us to this point, communicated with the *Hist* and learned from her commanding officer, Lieutenant Young, that the condition of affairs of Manzanillo was such as to warrant the belief that an attack by the force under my command would result in a speedy capitulation of the garrison and city. This he reported to me as being in entire accordance with a letter addressed to you by Commander Todd, of the *Wilmington*, which he had been permitted to read on board your flagship. Lieutenant Young, who had on board a competent pilot, assured me that it was entirely practicable to approach to within 2 miles of Manzanillo in a ship drawing as much water as does the *Newark*.

Inasmuch as the force detailed by you for the contemplated operations at the Isle of Pines was not all on hand, and as the *Wompatuck* could, in all probability, not leave Guantanamo until the 12th, or possibly the 13th, it appeared to me well to occupy this time of waiting in an attempt at securing Manzanillo and its garrison.

We waited off Cape Cruz that night in order to be joined by the *Alvarado* and *Osceola*, and then on the morning of the 11th started for Cuatro Reales Channel, the following ships accompanying the *Newark*: *Resolute*, *Suwanee*, *Hist*, *Osceola*, and *Alvarado*. In order to minimize the chances of accident that would be incurred in navigating waters only imperfectly charted, I sent the *Hist* with her pilot ahead. On her starboard beam was the *Suwanee*. In rear of these came the *Osceola*. In rear of the *Osceola* came the *Resolute*, and lastly the *Newark*, with the *Alvarado* close aboard, all keeping the lead going constantly. By a preconcerted system of signals the presence of shoal water or other danger could be instantly communicated from the leading ships in ample time to stop the progress of the *Resolute* and *Newark*, heavy-draft vessels.

We experienced no difficulty whatever in getting through Cuatro Reales, the least water found by the *Newark* being 5½ fathoms. At dark that day we anchored inside of the Great Barrier Reef, in 10 fathoms of water, about 40 miles distant from Manzanillo.

Yesterday morning, the 12th instant, my little flotilla got under way at half past 4 and proceeded to the vicinity of Manzanillo. The *Resolute*, *Suwanee*, *Hist*, and *Osceola* anchored well inside of the northern entrance. I hoisted a flag of truce on the *Newark* and proceeded to an anchorage about 3 miles distant from the town, whence I sent the *Alvarado*, also bearing a flag of truce, to present to the military commandant a demand for surrender, a copy of which I have the honor to inclose. This demand was placed in his hands by Lieutenant Blue at thirty-five minutes past noon. The reply was to the effect that the Spanish military code forbade surrender except as the sequence of a siege or other military operation.

The town, being fortified, is exempt from the privileges and immunities attached to defenseless places. Nevertheless, as you will perceive from my demand, sufficient time was given to permit noncombatants to leave the city. At 3 o'clock I signaled to the outlying vessels to take the stations off the town which had been assigned, and at 3.35 hauled down the flag of truce on the *Newark* and proceeded toward Manzanillo until the shoalness of the water forbade her further approach. At 3.40 fire was opened from this ship on the batteries, and was maintained with tolerable steadiness until 4.15 o'clock, with an accuracy surprising in view of the short time during which she had been commissioned, the other vessels following shortly after.

At 4.15 p. m., having seen supposed white flags hoisted on the Spanish gunboat *Cuba Espanola* and the commandant's quarters, I made signal "Cease firing," and sent the *Alvarado* in under flag of truce. At the same time the *Saranee*, *Hist.* and *Oceola*, all under the immediate orders of Lieutenant-Commander Delahanty, were approaching the town from the southward through the middle channel. When these vessels were within 1,000 to 1,500 yards of the batteries, the Spanish authorities opened fire on them at 4.35, paying no attention to the flag of truce on the *Alvarado*, which (as I have since been informed) they failed to perceive. The *Alvarado* hauled down her flag of truce and joined the other gunboats in returning the fire. At 4.50 opened fire again from the *Newark*. The Cuban forces at this time appeared to the northward of the town and began discharging volleys, which were apparently returned by Spanish artillery. The *Newark* threw a number of 6-inch shells in this direction, in order to assist the Cubans. The *Saranee*, *Oceola*, *Hist.* and *Alvarado* soon returned to the neighborhood of the flagship, and we all anchored at about 5.30 p. m. for the night. From that time until daylight this morning 6-inch shells were fired from the *Newark* at the batteries at irregular intervals, one shot being fired during each half hour. Daylight revealed a large number of white flags flying over the block-houses and batteries of Manzanillo and the approach of a boat from the shore bearing a flag of truce. The captain of the port came off and delivered to me a dispatch from the Secretary of the Navy, reading as follows: "Protocol of peace signed by the President; armistice proclaimed." My disappointment was, as may be imagined, very great, for I had every reason to believe that the garrison was entirely ready to surrender. I had hoped that the fleet under your command might have won one more laurel and gained one more important victory before the conclusion of peace.

A few projectiles fell close to this ship, but the enemy's attention was naturally directed chiefly against the gunboats. I am happy to report no casualties or injuries beyond three shots from Mauser rifles through the *Saranee's* ensign. What was possibly the last shot of the war was a 6-inch projectile fired from the *Newark* at 5.20 a. m. to-day. It gives me great pleasure to speak in the highest terms of the officers of this ship and of the remarkable gun practice she displayed.

I inclose reports of the commanding officers. It is impossible for me to exaggerate their loyalty, zeal, and bravery, which have been too often proved during the war to render eulogy on my part necessary. Subjected as they were to close fire from guns of various calibers, from old-fashioned smoothbores to Krupp 14-pounders, and volleys of Mauser bullets, they stuck to their post and upheld the honor of the flag. I earnestly commend to your favorable consideration Lieutenant-Commander Delahanty, Lieutenants Young, Purcell, and Blue, commanding the *Saranee*, *Hist.*, *Oceola*, and *Alvarado*, respectively.

A part of the contemplated plan of operations was the landing of some or all of the marines of Colonel Huntington's command. This officer's regret at the loss of an opportunity to win additional distinction for his corps and himself was only equalled by his careful study of the necessities of the case and his zealous entrance into the spirit of the enterprise.

Commander Eaton was, as is his wont, most ready and efficient, and with his ship was extremely helpful toward others. It was only the nature of his ship and her personnel which, under my positive orders, kept him from a more prominent place in the action.

Very respectfully, your obedient servant,

CASPER F. GOODRICH,
Captain, U. S. N., Commanding.

THE COMMANDER IN CHIEF,
Flagship New York, Guantanamo, Cuba.

CAMP McCALLA,
Guantanamo Bay, Cuba, June 15, 1898.

SIR: I have the honor to submit the following report:

In accordance with your verbal directions, I left camp at 9 a. m. yesterday with two companies of the battalion, C and D, commanded respectively by First Lieut. L. C. Lucas and Capt. William F. Spicer, with an aggregate of 160 men, and 50 Cubans under command of Lieut. Col. E. Eugene Tomas. Colonel Laborde, Cuban army, was also present, but without command.

My orders were to destroy the well at Cuzco, about 6 miles from this camp, which was the only water supply of the enemy within 12 miles of this place, and the existence of which made possible the continuance of the annoying attacks upon our force in camp here.

Two miles and a half from Cuzco half the Cubans and the first platoon of C Company, under Lieutenant Lucas's command, passed over a mountain on our left, hoping to cut off the enemy's picket. In this we failed, and our force was discovered by the

Spanish outpost, which retreated immediately and gave the alarm to the main body, whose headquarters were in a house at Cuzco.

A high mountain separated the two forces at this point, and each attempted to gain its crest as a point of advantage. In this we were successful, but were fired on heavily by the enemy from the valley, at a distance of 800 yards. This fire was replied to by the Cubans of the main body. Lieutenant Lucas, with 32 men of his platoon and the remaining Cubans, came into the fight at 11.15. The other nine men of his platoon, becoming exhausted, were obliged to return to Camp McCalla. Lieutenant Bannon conducted the second platoon of C Company just below the crest of the hill, out of fire from the enemy, leaving the narrow path, which was the only road, and making their way through the cacti. Just in rear of this platoon and following in single file was D Company. The crest of the hill was in the shape of a horseshoe, two thirds encircling Cuzco Valley and the well. The Cubans, and C and D companies occupied one-half of this horseshoe ridge, while Second Lieut. L. J. Magill, with one platoon (50 men) of A Company, came up from the valley on the opposite side, where he had been stationed as an outpost from Camp McCalla, having been attracted by the heavy fire, and believing his force necessary to our assistance, and occupied the left center of this horseshoe ridge. As soon as he saw our position he sent one of his men around the ridge to report to me. For fifteen minutes we were marching under a heavy fire, to which no reply was made, to gain this position. By the use of glasses and careful search by the men, individuals were discovered here and there, and, fire being opened upon them, they would break from cover to cover, and we were thus enabled to gain targets at which to fire, which had been heretofore impossible owing to the dense chapparal in which the enemy sought successful cover.

Many of the men fired as coolly as at target practice, consulting with each other and their officers as to the range. Among these were Privates Carter, Faulkner, and Boniface, all of whom did noticeable execution. This movement of the enemy gave Lieutenant Magill an opportunity to get in a cross fire, which was well taken advantage of.

Having reduced the enemy's fire to straggling shots, the U. S. S. *Dolphin*, Commander H. W. Lyon, U. S. N., which had been sent along the coast to cooperate with us if possible, was signaled to shell the house used as the enemy's headquarters and also the valley, but she was so far to the front, having mistaken the valley intended, that her fire was in Lieutenant Magill's direction, driving him to the reverse side of the ridge.

However, this shell fire started the enemy from his hiding places, which gave the other companies the opportunity to fire on them on the move.

Signal was made to the *Dolphin* to cease firing, and Lieutenant Magill was directed to form skirmish line and move down the valley in front of him toward the sea. This was defeated by renewed shell fire from the *Dolphin*.

The fight, which began at 11 a. m., was now drawing to a close, being over at 3 p. m. The enemy began a straggling retreat at 2 p. m., getting out of the valley as best they could.

The fire of the force under my command was at all times deliberate and aimed, sights being adjusted, and volleys were fired when sufficiently large bodies of the enemy could be seen to justify it. The two platoons of Company C, under First Lieut. Lucas and Second Lieut. P. M. Bannon, were handled with the best of judgment. D Company overcrowded on the firing line and men needlessly exposed themselves by standing in groups. First Lieut. W. C. Neville, commanding the first platoon, did his best with the men in front of him. Captain Spicer, commanding D Company, was overcome by the sun on the top of the hill and had to be sent on board the *Dolphin*. Lieutenant Neville injured his hip and ankle in catching his foot and falling down the mountain side after the fight was over. These accidents left Second Lieut. M. J. Shaw in command of D Company, which he handled with entire satisfaction. Forty men left the crest of the hill at 3.15 p. m. under Lieutenant Lucas and destroyed the well and burned the house lately occupied by the enemy. Canteens were taken from the men still holding the crest and filled with water required by signal from the *Dolphin*.

The marines fired on an average about 60 shots each, the Cubans' belts being filled during the action from the belts of the marines, each having to furnish 6 clips, or 30 cartridges.

The loss to our force was 1 private of D Company wounded slightly, and 10 or 12 overcome by heat. These latter were kindly taken on board the *Dolphin* and cared for. This ship rendered every possible assistance to the expedition. Two Cubans were wounded during the fight on the hill, one being accidentally shot by Colonel Laborde by a pistol.

While destroying the well the Cubans were placed up the valley from which the enemy retreated and began a noisy and hot fight with guerrillas who had not been dislodged. In this fight the Cubans lost 2 killed and 2 wounded, but killed 5 of the enemy.

The march home began at 5.30 p. m., camp being reached at 8 p. m.

From the best information since obtained, which is believed to be reliable, 60 of the enemy, among whom were 2 officers, were killed. The wounded were numerous, but the wounds were probably light, owing to the range of 600 or 1,000 yards, at which distance all the explosive effect of the bullets are lost. Eighteen prisoners, including 1 lieutenant, were captured; about 30 Mauser rifles and a quantity of ammunition.

Lieutenant Magill also captured a complete heliograph outfit and destroyed the signal station. This had been used ever since our arrival here and could be seen at all times. Before closing I desire to commend Lieutenant Magill's good judgment in coming up and the excellent manner in which he handled his men.

Sergt. John H. Quick was obliged to stand on the open ridge under fire to signal the *Dolphin*, which he did with the utmost coolness, using his rifle with equal judgment while not thus engaged. My only regret is that E Company, under the command of First Lient. James E. Mahoney, which had been sent to us from an outpost near Camp McCalla when the heavy firing was heard there, was unable to report to me until 4 p. m. Had he been an hour and a half sooner, I am satisfied that the entire force of the enemy, which was about 500 men, would have been captured. This delay was not due to any lack of zeal on his part.

I have the honor to be, sir, very respectfully, your obedient servant,

G. F. ELLIOTT,

Captain, United States Marine Corps, Commanding C Company.

Lient. Col. R. W. HUNTINGTON,

Commanding First Battalion of Marines,

Camp McCalla, Guantanamo Bay, Cuba.

HEADQUARTERS FIRST MARINE BATTALION,

Guantanamo, Cuba, June 18, 1898.

SIR: I desire to make the following supplementary report: Upon leaving camp you asked me if I wanted an adjutant. I declined to take one, the command being short of officers for duty; but having been notified that a Mr. Stephen Crane would be allowed to accompany the expedition, I requested him to act as an aid if one should be needed. He accepted the duty, and was of material aid during the action, carrying messages to fire volleys, etc., to the different company commanders.

Very respectfully,

G. F. ELLIOTT,

Captain, United States Marine Corps, Commanding Company C.

Lient. Col. R. W. HUNTINGTON, U. S. M. C.,

Commanding Battalion.

[First indorsement.]

U. S. S. MARBLEHEAD, *June 19, 1898.*

Respectfully forwarded to the commander in chief.

The expedition was most successful, and I can not say too much in praise of the officers and men who took part in it.

B. H. MCCALLA, *Commander, S. O. P.*

[Second indorsement.]

U. S. FLAGSHIP NEW YORK,
Off Santiago de Cuba, June 20, 1898.

Respectfully referred to the Secretary of the Navy.

W. T. SAMPSON,

Rear-Admiral, Commander in Chief U. S. Naval Force,

North Atlantic Station.

BUREAU OF NAVIGATION,
Navy Department, July 7, 1898.

Received and forwarded to the colonel commandant, Marine Corps.

A. S. CROWNSHIELD,

Chief of Bureau.

U. S. S. MARBLEHEAD, THIRD RATE,
Guantanamo, Cuba, June 16, 1898.

SIR: I have the honor to inform you that on the 14th instant, at the suggestion of Colonel Laborde, the Cubans under the command of himself and Lieutenant-Colonel Thomas, supported by two companies of marines under the command of Captain Spicer and Lieutenant Elliot, routed the force of about 300 Spaniards stationed in the pass between the marine camp and the south coast.

One portion of the command advanced by the cliffs so far as the well and blockhouse, which I referred to in my No. 88, supported by the *Dolphin*.

The other portion diverged from the coast line and advanced up the valley to the southeast, the two forces eventually uniting on the sides of the mountain in the vicinity of the blockhouse and well.

In this vicinity the Spaniards, numbering about 300, were encountered and driven from their position, sustaining a loss of between 40 and 60 killed and 1 officer and 17 soldiers captured.

As the day was well advanced, it was not possible for our force to make a search for the Spanish wounded, and I fear that many were left on the field uncared for.

We suffered a loss of 2 Cuban soldiers killed; 6 wounded, 4 of whom were Cubans. In addition, 23 marines were prostrated by the heat and, with the wounded, were transferred to the *Dolphin*, from which ship the force was also supplied with ammunition during the engagement.

The well and blockhouse referred to, on the south coast, were destroyed and a set of heliograph instruments taken.

The object of the movement was for the purpose of relieving the pressure on the marine camp by an offensive movement and it was, I believe, entirely successful.

I need hardly call attention to the fact that the marines would have suffered much less had their campaign hats not been on the *Resolute*.

I desire to call particular attention to the devotion of the Cubans to the cause of freeing their island, shown in so many ways, by stating that the last words of the Cuban who was shot through the heart and buried on the field were, "Viva Cuba Libre."

Inclosed, marked "A," is a list of the Spanish soldiers captured.

The second lieutenant, also captured, is Francisco Batista, of Guantanamo City.

The marines who were prostrated by the heat were nearly all able to return to their camp early in the evening.

Very respectfully,

B. H. MCCALLA,
Commander, United States Navy, Commanding.

The COMMANDER IN CHIEF,
North Atlantic Station.

HEADQUARTERS FIRST MARINE BATTALION,
 CAMP HEYWOOD, SEAVEYS ISLAND,
Navy-Yard, Portsmouth, N. H., September 19, 1898.

SIR: I inclose herewith a letter to myself from Capt. G. F. Elliott, U. S. M. C., relating to errors in the report of Commander B. H. McCalla, United States Navy, about the fight at Cuzco, Cuba, June 14, 1898, which letter I ask to be filed with the report referred to.

Upon the morning of June 14, 1898, Captain Elliott asked me who commanded the projected expedition to Cuzco. I told him that he was not under the command of the Cuban colonel, Laborde, but that he would consult with him, and if Laborde saw fit to issue orders he would obey them only if the movement approved itself to his judgment. I have cause to believe that Laborde's authority was not recognized by the officer in command of the Cubans.

Very respectfully,

R. W. HUNTINGTON,
Colonel Commanding First Marine Battalion.

The COLONEL COMMANDANT,
 UNITED STATES MARINE CORPS.

HEADQUARTERS FIRST BATTALION OF MARINES,
 CAMP HEYWOOD, SEAVEYS ISLAND,
Kittery, Me., September 16, 1898.

SIR: I respectfully call your attention to the errors in the official report of Capt. B. H. McCalla, United States Navy, in regard to the military status taken by the battalion of marines under my command at the Cuzco fight, near Guantanamo Bay, June 14, 1898.

As this report will be filed for general publication with other archives of Government relating to the Spanish war, it should be correct.

Captain McCalla states in his report as follows:

"Cubans under the command of himself (Colonel Laborde) and of Lieutenant-Colonel Tomas, supported by two companies of marines under the command of Captain Spicer and Lieutenant Elliott, routed a force of 300 Spaniards."

The facts are these: Two companies of marines formed a battalion under my command, and the companies were commanded, as stated in my report, by Captain Spicer and First Lieut. L. C. Lucas.

My command was not a supporting body for the Cubans, and before leaving camp, after conversation with you on the subject, I left with the understanding that I was to act with the Cubans so far as in my judgment it was for the good of the expedition, but that I was not under the command of either of the insurgent commanders.

This word "support," as used, is a military misnomer, for the marines numbered 225 and the Cubans 50 in the fight, and although the latter were brave enough, their quality as efficient fighting men was on a par with that of the enemy.

My report states that there were 500 of the enemy engaged, and it is now known that the force was a little larger, and not 300, as stated by Captain McCalla.

I believe Captain McCalla's report was made from the statements received from Colonel Laborde, and if he had believed mine, made to you and forwarded to him for his information, incorrect, he had many opportunities to call my attention to the facts at the time, but he left me for months believing it accepted unquestioned while controverting it in his own.

Very respectfully,

G. F. ELLIOTT,
Captain, United States Marine Corps.

Col. R. W. HUNTINGTON,
United States Marine Corps, Commanding First Battalion of Marines.

REPORT OF INSPECTION OF THE MARINE BATTALION AT CAMP HEYWOOD, SEAVEYS ISLAND, PORTSMOUTH, N. H., SEPTEMBER 14, 1898.

CAMP HEYWOOD, SEAVEY'S ISLAND,
Portsmouth, N. H., September 18, 1898.

SIR: In obedience to your order of September 12 instant, to proceed to the navy-yard, Portsmouth, N. H., for the purpose of inspecting the First Battalion of Marines at Camp Heywood, Seaveys Island, I have to report as follows:

I arrived at Camp Heywood on the afternoon of the 14th instant, and on the following morning proceeded with the inspection, the battalion being formed in column of companies, in heavy marching order, across the road leading into the camp from the navy-yard, the most available place for the purpose. No review nor drill was practicable on account of the conformation of the ground.

INSPECTION OF COMMAND

Organization: First Marine Battalion, six companies, commanded by Col. Robert W. Huntington, U. S. M. C.; adjutant, First Lieut. H. L. Draper, U. S. M. C.; sergeant-major, William Carter, first sergeant, U. S. M. C. (acting).

The military bearing and general appearance of the command are most excellent, and when formed for inspection the battalion presented a most military and effective appearance, a body of which the commander and all its officers, as well as the Marine Corps, may justly feel proud.

I am informed by the commanding officer (Col. R. W. Huntington) that on arriving at this camp from Guantanamo, Cuba, both officers and enlisted men were very much debilitated and exhibited evidences of great lassitude and physical weakness; but the climatic conditions prevailing here, together with the wholesome food, good water, and excellent sanitary arrangements of the camp, have restored the members of the command to almost their normal condition, and they are ready and willing for any service they may be called upon to perform, although there are still manifest slight traces in the condition of some of the men of the debility contracted in Cuba. It is desirable that both officers and enlisted men of the battalion should be returned to their respective stations as soon as practicable, and this is especially so with a view to the settlement of their accounts.

ARMS.

The condition of the arms is excellent.

The ballistic qualities of the 6-millimeter rifle are superior for field service. Some minor defects are to be noted. The extractor-springs have frequently broken; the

follower and trigger have sometimes broken. The gun, when loaded, "empty chamber," opens easily upon being struck by a branch when passing through woods, and when closed, loaded, an accident is liable to occur. The "stop" for taking out breechblock is liable to be misplaced, and results in the falling out of the extractor and spring when the bolt is drawn back. The rifle is not sighted for the cartridge issued. The bayonet comes easily from the scabbard, and quite a number of them have been lost passing through woods.

ACCOUTERMENTS.

The belts, bayonets, and scabbards are of satisfactory shape and material. It is found that the small eyelet holding belt suspenders together in the back has pulled out in a majority of cases, and it is recommended that a sliding metal buckle be substituted. This should be movable, for the reason that men, in carrying 180 rounds of ammunition, prefer the belt much higher on the body than when empty. It is suggested that belt suspenders be made in future to conform in color to equipment, as the contrast of broad, black belt and suspenders worn over any campaign suit is very marked, even at long distances.

EQUIPMENTS.

A considerable number of the equipments have been necessarily soiled and damaged by the service to which they have been subjected in the field; yet most of these articles will answer for a like service again if required. The commanding officer reports the knapsacks, haversacks, and canteens to have given entire satisfaction.

All equipments are marked with the company letter and the man's individual company number. The color of equipments and straps is found to be excellent, as little contrast is shown between them and campaign suits, and not visible contrast at a distance.

CLOTHING.

The new issue shoe has given complete satisfaction.

The knitted underwear, considering everything in the way of rough usage that it has had—hot weather, and necessity for some flannel at night over abdomen—has been thoroughly satisfactory.

The campaign suits answered perfectly the purpose for which they were intended.

The quartermaster of the battalion (Capt. C. L. McCawley, A. Q. M., U. S. M. C.) states that the quality and sufficiency of the clothing, equipage, and stores of all kinds furnished the battalion by the quartermaster's department at Washington, D. C., and the assistant quartermaster's department at Philadelphia, Pa., have been of the utmost satisfactory character; that everything needed to make the command comfortable and efficient had been promptly provided, and through this means it has been practicable for the battalion at any time to go into temporary or permanent camp, as desired; that the efficient support he has received at all times from the colonel commandant, the officers of the quartermaster's department at Washington, D. C., and Philadelphia, Pa., have enabled him to conduct his department in a manner satisfactory to the commanding officer of the battalion.

The medical officer (Dr. John M. Edgar) informs me that the supplies and equipment of his department have been ample and most satisfactory.

The following memorandum, furnished by the medical officer, shows the average number of sick at various periods:

On board the U. S. transport *Panther*, Key West, Fla., from April 30 to May 24, 1898, inclusive, 25 days; total sick days, 421; daily average, 16 plus.

Camp Sampson, Key West, Fla., from May 25 to June 6, inclusive, 13 days; total sick days, 356; daily average, 27 plus.

Camp McCalla, Guantanamo, Cuba, from June 10 to August 5, inclusive, 57 days; total sick days, 558; daily average, 9 plus.

Camp Heywood, Seaveys Island, Portsmouth, N. H., from August 26 to September 17, inclusive, 22 days; total sick days, 128; daily average 5 plus.

It is worthy of note that during the entire service of this battalion of 25 commissioned officers and 623 enlisted men, from April 22, when they embarked on board their transport at New York to the present time, there has not been a single case of yellow fever nor death from disease of any kind and but few cases of serious illness; a remarkable fact, when it is considered that these men were the first United States troops to land in Cuba, and during their entire service there were subject to the same climatic influences as other troops, among whom fever, diarrhea, dysentery, etc., caused so many casualties.

Very respectfully,

GEORGE C. REID,

Major, United States Marine Corps, Adjutant and Inspector.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,

Headquarters, Washington, D. C.

RETURN OF TROOPS.

[Organization commanded by Col. R. W. Huntington.]

	Colonel.	A. Q. M.	Major	Captains.	First lieutenants.	Second lieutenants.	First sergeants.	Sergeants.	Corporals.	Field musicians.	Privates.	Present and absent. Commissioned officers.	Enlisted men.	Present at inspection Commissioned officers.	Enlisted men.	Absent at inspection. Commissioned officers.	Enlisted men.
Present at camp	1	1		4	3	3	4	24	23	12	206	23	451	10	237	4	106
Absent from camp			1					1			10	1	12				

List of commissioned officers.—Col. R. W. Huntington; Surg. J. W. Edgar; Capt. and A. Q. M. C. L. McCawley; First Lieut. H. L. Draper; Capt. F. H. Harrington, M. C. Goodrell, G. F. Elliott, W. F. Spicer; First Lieut. J. E. Mahoney, C. L. A. Ingata, L. C. Lucas, C. G. Long, W. C. Neville, A. S. McLemore, W. N. McKelvy; Second Lieut. L. J. McGill, M. J. Shaw, P. M. Bannon, N. H. Hall, S. D. Butler, G. C. Reid, R. M. Appleton, and E. A. Jonas.

INSPECTION.

Inspecting officer: Maj. George C. Reid, adjutant and inspector, U. S. M. C. *Organization,* First Marine Battalion, commanded by Col. R. W. Huntington, U. S. M. C.; adjutant, First Lieut. H. L. Draper, U. S. M. C.; quartermaster, Capt. Charles L. McCawley, A. Q. M., U. S. M. C.; sergeant-major, First Sergt. William Carter, acting; uniform, undress, heavy marching order. *First company, B,* commanded by First Lieut. C. L. A. Ingata, First Sergt. William Kehoe; number of sergeants 4, corporals 3, field music 1, privates 57; general appearance, excellent; proficiency of officers at inspection, excellent; proficiency of enlisted men at inspection, excellent; clothing, condition and fit, good. *Second company, E,* commanded by First Lieut. J. E. Mahoney, First Sergt. John H. Quick; number of sergeants 4, corporals 4, field music 2, privates 61; general appearance, excellent; proficiency of officers at inspection, excellent; proficiency of enlisted men at inspection, excellent; clothing, condition and fit, good. *Third company, D,* commanded by Capt. W. F. Spicer, First Sergt. George H. Cox; number of sergeants 4, corporals 4, music 2, privates 53; general appearance, excellent; proficiency of officers at inspection, excellent; proficiency of enlisted men at inspection, excellent; clothing, condition and fit, good. *Fourth company, Colt gun detachment,* commanded by Second Lieut. R. M. Appleton, First Sergt. Samuel G. Mawson; number of sergeants 3, corporals 1, field music 2, privates 22; general appearance, excellent; proficiency of officers at inspection, excellent; proficiency of enlisted men at inspection, excellent; clothing, condition and fit, good. *Fifth company, C,* commanded by Capt. G. F. Elliott, First Sergt. Joseph M. Foley; number of sergeants 2, corporals 3, field music 1, privates 55; general appearance, excellent; proficiency of officers at inspection, excellent; proficiency of enlisted men at inspection, excellent; clothing, condition and fit, good. *Sixth company, artillery,* commanded by Capt. F. H. Harrington; first sergeant, Sergt. B. F. Fogg, acting; number of sergeants 2, corporals 2, field music 2, privates 58; general appearance, excellent; proficiency of officers at inspection, excellent; proficiency of enlisted men at inspection, excellent; clothing, condition and fit, good.

The men are well set up and the military bearing and general appearance of the command, as a whole, excellent; general proficiency of officers and enlisted men on review, excellent.

Inspection of command.—Organization, First Marine Battalion, commanded by Col. R. W. Huntington, U. S. M. C.; adjutant, First Lieut. H. L. Draper, U. S. M. C.; quartermaster, Capt. Charles L. McCawley, A. Q. M., U. S. M. C.; sergeant-major, First Sergt. William Carter, acting; uniform and order of equipment, undress, heavy marching order. Officers present—18; field 1, staff 2, company 15. Officers absent on duty and on leave, 6—staff 1, company 5. Enlisted men present: Noncommissioned officers 49; field music, 10; privates, 302. Enlisted men absent, sick, on duty, and on leave: Noncommissioned officers, 6; field music, 2; privates, 94.

Color guard.—Appearance and military bearing, excellent; condition and fit of clothing, good; condition of arms, excellent; condition of accouterments, good; condition of equipments, serviceable, though showing the wear of service they have been subject to in Cuba; knapsacks were properly packed; some men did not have two pairs shoes; each man had two suits of underclothing.

First company.—Condition and fit of clothing, good; condition of arms, excellent; condition of accouterments, good; condition of equipments, serviceable, but stained and worn in service; knapsacks were properly packed; each man had a full kit; some men did not have two pairs shoes; each man had two suits underclothing; all wearing Government shoes; clothing properly marked, except that issued since the battalion left the United States. Some of the men have not a complete cleaning kit, having lost some of their articles during the campaign.

Second company.—Condition and fit of clothing, good; condition of arms, excellent; condition of accouterments, good; condition of equipments, serviceable, but stained and worn in service; knapsacks were properly packed; each man had a full kit; some men did not have two pairs shoes; each man had two suits underclothing; all wearing Government shoes; clothing, same as first company; cleaning kit, same as first company.

Third company.—Condition and fit of clothing, good; condition of arms, excellent; condition of accouterments, good; condition of equipment, serviceable, but stained and worn in service; knapsacks were properly packed; each man had a full kit; some men did not have two pairs shoes; each man had two suits underclothing; all wearing Government shoes; clothing, same as first company; cleaning kit, same as first company.

Fourth company.—Condition and fit of clothing, good; condition of arms, excellent; condition of accouterments, good; condition of equipments, serviceable, but stained and worn in service; knapsacks were properly packed; each man had a full kit; some men did not have two pairs shoes; each man had two suits underclothing; all wearing Government shoes; clothing same as first company; cleaning kit, same as first company.

Fifth company.—Condition and fit of clothing, good; condition of arms, excellent; condition of accouterments, good; condition of equipments, serviceable, but stained and worn in service; knapsacks were properly packed; each man had a full kit; some men did not have two pairs shoes; each man had two suits underclothing; all wearing Government shoes; clothing, same as first company; cleaning kit, same as first company.

Sixth company.—Condition and fit of clothing, good; condition of arms, excellent; condition of accouterments, good; condition of equipments, serviceable, but stained and worn in service; knapsacks were properly packed; each man had a full kit; some men did not have two pairs shoes; each man had two suits underclothing; all wearing Government shoes; clothing, same as first company; cleaning kit, same as first company.

Remarks.—Both officers and enlisted men of the battalion are in excellent health, and their period of encampment on Seaveys Island has been of exceeding benefit to them in this respect. On arriving here both officers and men were considerably debilitated by their service in Cuba, though 98 per cent were fit for duty. There was no opportunity for drilling, on account of the conformation of the ground and lack of space.

INSPECTION OF CAMP HEYWOOD.

Location.—Eastern part of Seaveys Island, on elevated ground.

Plan.—Battalion encamped in column of platoons, streets running north and south; headquarters west of column. Company officers encamped at south end of their own company streets. Each company has its own kitchen hydrant and sink; line of hydrants perpendicular to company streets, about 30 feet from flank of company; then line of kitchens 10 feet in rear of hydrants; then line of company sinks 30 feet from line of kitchens. Latter could not be placed farther to the rear of kitchens, owing to the conformation of the ground. Companies are encamped in the order in which they form in battalion; hospital tents southwest of last company, by themselves, with small regulation tent for surgeon near. Commissary tent, where stores are served out, at southeast corner of camp, convenient to kitchen; quartermaster's store tents on west side of camp near road, to be convenient for drays; guard tent northwest corner of camp, on main road to navy-yard. Tent erected at east end of camp by Army and Navy Christian Commission, in which tables and chairs are placed for convenience of men in reading and writing.

Tents.—Number occupied, army, wall, 146; hospital, 6. Both classes have been found to be of excellent quality and of convenient size. The ordinary wall tents can hold 6 men, but it has been found to add much to the comfort of the men to place no more than 5 in a tent, and this number has never been exceeded. Hospital tents hold 10 men in cots very comfortably. Of the 6 hospital tents 3 are used for the sick, 1 for officers' mess, 1 for quartermaster's stores, and 1 for the members of the guard. Of 146 regulation wall tents 19 are in use by officers, 4 by officer of the guard and prisoners, 2 by quartermaster's stores, 2 for officers' servants. Tents have all been supplied with floors, and owing to the very uneven ground of the encamp-

ment most of the floors have been leveled by using heavy pegs for the beams of floors to rest upon. All enlisted men's tents are supplied with straw mattresses by the Quartermaster's Department, and these add greatly to the comfort of the men, both as to warmth and softness. Tent pegs should always be supplied far in excess of the number actually required for pitching tents, as many break from bad wood or striking stones after they enter the ground. The tents of both classes, wall and hospital, are of excellent quality, workmanship, and sizes. I have found many iron pegs missing in cut poles. These should be secured in the heads of poles so that they can not be easily dropped, particularly when loaded or unloaded from ships or cars.

Hydrants—water.—Each company has its own hydrant at the north end of its street. These hydrants are supplied by a pipe leading from the reservoir of the island. This water is only used for cooking and washing purposes. Drinking water of a very superior quality, and in abundance, is furnished by a well in the southwest corner of the camp. Each hydrant has a strainer and filter screwed onto the nozzle, which eliminates the impurities, very largely, from the reservoir water. This water is soft, and has enabled the men to wash clothes with great facility—the first fresh water they have had for this purpose since leaving New York on April 22 last. A bath house is erected a short distance southeast of the camp, where half barrels are placed in stalls so that the men can have a fresh, soft-water bath, which they find a great luxury.

Ice.—Ice is furnished in abundance by the navy-yard authorities, and a small ice house is built east of the camp, where milk, vegetables, meats, etc., are preserved.

Kitchens.—These are built of pine 1-inch lumber, 9 by 8 feet, closed on the north and east sides. The men prefer to cook in the open air, but when rains occur these kitchens are found invaluable; and even in fair weather the company cooks keep their mess chests and provisions in these kitchens to preserve them from the very heavy dews.

Sinks.—These are made of pine lumber, one for each company and one for the officers. The night soil is carried off three times each week in wagons, and each day fresh lime is sprinkled in them.

Sanitary arrangements.—It is strictly required that all garbage, such as potato and onion parings, all remains of food—either that left by the men from meals or that left over from cooking—also coffee and tea grounds, etc., are burned in the kitchen fires. Careful inspections are frequently made to see this order carried out. When slop and dishwater can not be emptied into the river, the same is buried. At this camp, after the sink boxes containing excreta are removed, three times each week, the ground is scraped up and a layer of lime is sprinkled over the surface.

Clothes are washed on boards erected for that purpose about 100 yards northeast of the camp, and on ground sloping away from it.

When weather permits, all bedsacks are taken out of tents at morning fatigue, 7 a. m., and the tent walls are rolled up, which keeps the tents clean and dry.

Messing arrangements.—Each company has its own mess. In this camp, near each company kitchen, pine-board tables are erected under the thick young pine trees for mess tables, but many of the men prefer to take their rations off by themselves, as they did in the field, to eat. The mess cooks have given great satisfaction. Companies are messes together, three mess attendants from each company waiting on the men of their own company; and after the company finishes, all dishes are washed and the mess room cleaned. In this way the mess room and utensils are kept clean, and under one officer's constant supervision. The rations are always wholesome, well cooked, and evenly distributed.

Respectfully submitted.

GEO. C. REID,

Major, United States Marine Corps, Adjutant and Inspector.

THE COLONEL COMMANDANT UNITED STATES MARINE CORPS,

Headquarters, Washington, D. C.

REPORT OF COMMANDING OFFICER MARINE BARRACKS AND CAMP LONG, PORTSMOUTH, N. H., RELATING TO SPANISH PRISONERS.

MARINE BARRACKS, NAVY-YARD,

Portsmouth, N. H., August 26, 1898.

SIR: I have the honor to report that, in obedience to your orders of the 7th of July, 1898, I assumed command of the marine barracks and the Spanish prisoners at this station on the 8th of July, 1898.

On the 11th of July, 1898, I received from the U. S. S. *St. Louis* 692 Spanish prison-

ers, 10 officers and 682 men, and on the 16th of July I received 963 Spanish prisoners, 2 officers and 961 men, from the U. S. S. *Harrard*. Many of the prisoners, when they landed, were in a sick and enfeebled condition, a number of them falling down and being unable to move until picked up and placed in an ambulance, in which they were carried either to the camp or to the naval hospital.

I found upon my arrival here that the buildings being erected for the prisoners were entirely inadequate for the purpose, and, upon my representation to Admiral Carpenter, the commandant of this navy-yard, he authorized other buildings to be built from time to time, and finally accommodated all the prisoners comfortably.

I also recommended that water-closets be put over the river and that other buildings be built, which recommendations were approved by the commandant of this navy-yard. The marine camp was located outside the stockade, and the marines to the number of 130 were quartered there. They had a large building to sleep in and another to mess in. The marine officers had a building of their own, situated on the highest point of Seaveys Island, where I also had my quarters. A flagstaff was erected in front of these quarters and a flag hoisted at the regular times, a sunset gun also being placed there and being fired at sunrise and sunset, which regulated the camp into a regular military encampment.

At the northeastern part of the stockade I had a guardhouse built for 50 marines, and 14 cells built for refractory Spanish prisoners. On this part of the island I discovered a well that had been covered up with rock and dirt, which, upon cleaning out, I found to contain most excellent water.

On the northeast part of the island I laid aside a plot of ground for a graveyard for the prisoners who have died, and have had their graves marked so that they can be identified at any time. I gave all the dead military funerals, as I considered that, being prisoners of war, they were entitled to it. I have had three volleys fired over their graves, the Spanish flag wrapped around their coffins, and a Catholic priest to read the services.

I named the camp "Camp Long," after the honorable Secretary of the Navy.

The discipline of the camp has been most excellent in every respect. I was compelled to confine some of the prisoners from time to time for breaking the rules of the camp, but the offenses were at no time of a very serious nature.

Cpts. Allen C. Kelton and Benjamin R. Russell rendered me great assistance and were always vigilant and attentive to their various duties. First Lieut. Theodore P. Kane, especially, was of great benefit to me, helping me with the correspondence and getting the camp into shape. Second Lieuts. Thomas S. Borden, David D. Porter, Charles S. Hatch, and Don A. Baxter were all careful in regard to their duties. The three latter came in for the war and I trust that they may be retained.

Medical Inspector Remus C. Persons was always on hand to look out for the sick. He distributed many articles of clothing to the prisoners with his own hands. Passed Assistant Surg. Lewis Morris, who was detailed to accompany me every morning on my tour of inspection, was always on hand and careful to detect any trouble in regard to the sanitary condition of the camp. Pay Inspector Joel P. Loomis's reputation as a good caterer followed him here, and in clothing and feeding the prisoners and attending to his duties, in connection with his clerk, Mr. John A. Kelly, worked most excellently. Carpenter Joseph B. Fletcher did excellent work in superintending the construction of the buildings and was of great assistance to me.

The system adopted of marching the prisoners down in three columns of twos to take their meals from the three tables near the pavilion worked well, the men coming up in single file and taking their food in a bowl and plate and then going inside the pavilion, where I corralled them with sentinels.

The day upon which Camp Long was established was the one hundred and twenty-third anniversary of the United States Marine Corps, it completing the one hundredth year of its existence as a corps on that day.

Seaveys Island, upon which the camp is situated, is rocky, hilly, and rough, with bold ledges of rock running up to a considerable elevation, displaying the finest views of the river and harbor. The officers' building is situated over the most dangerous point, called Pull-and-be-damned Point. The camp is at one end of the island, surrounded at one side by a stockade of boards 10 feet high, outside of which, at a distance of 20 feet, is a high barbed-wire fence. Sentry boxes are at each angle, and there are twelve sentinels inside the camp, patrolling along the dead line, the prisoners' quarters, sinks, and the pavilion.

Every facility is given the prisoners to wash their clothes, and on the river side down the steep slope to the swiftly running tides they were allowed to wash their dishes and apparel. The thirteen Spanish officers were paroled from 8 a. m. until sunset each day. They never broke their parole, always coming back on time, and were of great service to me in managing the prisoners.

The Spanish commissioned officers have a separate house of their own and have

servants from the prisoners to wait on them. They have much better fare than the rest of the prisoners, and claret wine is served to them. I have given them all the respect and assistance due their rank, and I feel that they have appreciated it. I utilized them by putting them on duty as officer of the day, assisting in the policing, and looking out for the buildings, and they have fully cooperated and assisted in carrying out the routine of the camp with my own officers.

I had 36 warrant officers, consisting of engineers, sergeants of marines, etc., put in a separate building, with a mess table of their own and bunks to sleep on instead of hammocks. The 125 petty officers from the different ships I had kept together in a building separate from the rest. All the prisoners I had divided up into ships' companies according to their respective ships, and had the 10 buildings lettered A, B, C, etc.

The sick prisoners at the naval hospital were from the *Maria Teresa*, *Vizcaya*, and *Oquendo*. They suffered from insufficient nutriment and a pernicious malarial fever. Some of the crew of the *Cristobal Colon* were convicts from the Canary Islands, but they did not give me any trouble. The prisoners all had fresh beef, coffee, fish, butter, hash, etc.

There were 6 gatling guns kept ready at all times, 2 in the immediate vicinity of camp, 2 more, which commanded the entire camp and the whole island, on the reservoir, and 2 others at the 2 bridges leading from the navy-yard to Seaveys Island. Cossack guards were kept at these guns day and night, 120 men at Camp Long and 100 men at the navy-yard barracks.

There was a system of signals arranged between the camp and the navy-yard barracks by rockets, and there was a telephone connection between the two places, making security doubly sure in case of an outbreak among the prisoners.

Second Lieut. Frank A. Kinne and Robert E. Devlin were on duty here a short time and rendered efficient service.

I inclose a copy of my weekly report showing the number of Spanish prisoners present, also the number of sick in the camp and in the naval hospital up to the date of my detachment; also a number of photographs that will give you a good idea of the camp. I have had a complete muster of the prisoners, so as to verify the prisoners before turning them over to my relief. I also send you a complete list of all the prisoners from the time of my taking command until my detachment.

I had the camp for the battalion of marines under the command of Col. Robert W. Huntington laid out on the northern part of the island, near Camp Long, water pipes put in from the reservoir, sinks built, floors laid for all the tents, etc.

Camp Long assumed historical importance in the Spanish war and was visited by thousands of people, who were always received courteously and given every attention. The orders had to be very strict in regard to actually going inside the camp, and the exceptions were very rare in this respect.

Admiral Cervera visited the camp on the 15th of August and received a cordial reception from his men and from the people of the city of Portsmouth, as well as those in the adjacent country, who flocked to see him during his visit. The paymaster who accompanied him paid out about \$35,000 to the Spanish prisoners.

I inclose a sketch of the prison, made by Lieut. T. S. Borden.

I established a store inside the camp that was ably managed by Mrs. Ida N. Gulick, the post trader, where the prisoners could obtain small stores at a fixed price (a list of prices is herewith inclosed), which added greatly to their comfort and benefit.

On August 24 more prisoners arrived—8 officers and 8 enlisted men. They were captured on the *Argonaut* at the beginning of the war, off the coast of Cuba, and have since been confined in Fort McPherson, Ga. They were brought here under the charge of First Lieut. A. P. Buffington, Thirteenth Infantry, United States Army.

The complete list of Spanish prisoners, which I inclose, is marked A; the list of prisoners who have died since date of landing to date, B; the copy of weekly report, C; the sketch of the camp by Lieutenant Borden, D; and the photographs taken by Lieutenant Baxter, E. A list of prices at the store within the stockade is inclosed, marked F.

Very respectfully,

JAMES FORNEY,
Colonel, United States Marine Corps, Commanding.

THE COLONEL COMMANDANT UNITED STATES MARINE CORPS,
Washington, D. C.

Price list of things in shop at Camp Long, August 20, 1898.

	Cents.		Cents.
Blacking brushes.....	25	Pens.....	5
Dressing combs.....	15	Sheet of paper and envelope.....	1
Looking-glasses.....	15	Towels.....	20
Toothbrushes.....	15	Pies.....	5
Tooth powder.....	25	Doughnuts.....	1
Tooth powder, small.....	10	Chocolate bars.....	10
Locks.....	25	Marshmallows.....	5
Matches.....	5	Bananas.....	
Cigars.....	10	Oranges.....	
Cigars.....	5	Peaches.....	
Cigarettes.....	5	Candy.....	
Cigarette paper.....	0	Suspenders.....	
Cheroots.....	15	Undershirts.....	25
Tobacco (paper).....	5	Socks.....	15
Pipes, corn cob.....	5	Condensed milk.....	
Shoe blacking.....	5	Eggs.....	
Shoe strings.....	5	Handkerchiefs.....	
Whisk brooms.....	15	Ginger ale.....	5
Toilet soap.....	10	Lemon soda.....	5
Ink.....	5	Sarsaparilla.....	5
Penholders.....	10	Chocolate.....	5

U. S. S. OREGON (first rate),
New York Navy-Yard, August 29, 1898.

SIR: I have the honor to acknowledge the receipt of your letter of August 9, and in reply would respectfully state that this ship took a most prominent part in the bombardments of Santiago on June 6, 16, and July 1 and 2, and in the battle of the 3d of July, and was also under fire during the sinking of the *Reina Mercedes*.

The marines were stationed at the secondary battery and had the two 1-pounders in the fighting top, the four 6-pounders on the bridge, and four 6-pounders on the superstructure, which were manned by 6 noncommissioned officers and 38 privates. The remainder of the guard were stationed as sharpshooters.

From the time the *Oregon* left Callao, Peru, until after the destruction of the Spanish fleet off Santiago de Cuba the marines kept a constant watch, as sharpshooters forward and aft, and a lookout for every pair of 6 and 1 pounders which they manned, the remainder of the guns' crews sleeping at their guns with ammunition at hand.

We went to general quarters frequently, at times twice in one night. The men were thoroughly drilled at their guns, and within thirty seconds after general quarters sounded every gun manned by them was ready to open fire.

This was the result of constant and careful drill and instruction. When the marines went into action they went in coolly, every man doing his duty, even though they occupied the most exposed position on the ship, with no armor of any kind to protect them.

For the way the marines manned and fought their guns and for their good behavior under fire in every battle that their ship took part in I would respectfully refer you to Capt. C. E. Clark, the commanding officer, and Lieut. Commander J. K. Cogswell, the executive officer.

The destructive effect of the fire of the secondary battery of the fleet is shown by the report of the board ordered to report on the effect of the gun fire on the Spanish fleet.

The marine guard of this ship also formed three-fourths of the force which made the first landing of armed troops on the island of Cuba at Guantanamo Bay on June 10, 1898.

I respectfully submit the station bill of the marine guard at general quarters, which was faithfully carried out.

Very respectfully,

R. DICKINS,
Captain, United States Marine Corps, Commanding Guard.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,
Washington, D. C.

[First indorsement.]

ASHEVILLE, N. C., September 15, 1898.

The within report is a modest statement, by a brave and most deserving officer, concerning the highly meritorious part taken by himself and Lieut. A. R. Davis and the noncommissioned officers and privates of the marine guard of the *Oregon* during the days and nights of anxious waiting for the Spanish fleet on the Atlantic, and with searchlights at the entrance of Santiago harbor, during three engagements

with the enemy's batteries, and in the battle of the 3d of July. Every man in the guard had an exposed station, and the only reluctance ever shown by any of them promptly to obey was when ordered to take shelter behind the turrets, while the alacrity with which they ever sprang to their posts showed that they were all animated by the spirit that has given the Marine Corps its reputation for bravery and faithfulness during a full century.

C. E. CLARK,
Captain, U. S. N.

STATIONS OF MARINE GUARD AT GENERAL QUARTERS.

Capt. R. Dickins, U. S. M. C., in command; Lieut. A. R. Davis, U. S. M. C., in charge of battery on bridge.

Guns 3 and 4, Sergeant Ramsey in charge:

- | | |
|----------------------|--------------------|
| 1. Private Keating. | 1. Private Cross. |
| 2. Private Moody. | 2. Private Turner. |
| 3. Private Horskind. | 3. Private Smith. |
| 4. Private Slaght. | 4. Private Kohn. |

Guns 15 and 16, Sergeant Hunter in charge:

- | | |
|---------------------|----------------------|
| 1. Private Mahaney. | 1. Private Chafford. |
| 2. Private Flores. | 2. Private Frink. |
| 3. Private Allen. | 3. Private Boydston. |
| 4. Private Lowe. | 4. Private Folter. |

Guns 17 and 18, Sergeant Heiligenstein in charge:

- | | |
|--------------------|----------------------|
| 1. Private O'Shea. | 1. Private Miller. |
| 2. Private Sewell. | 2. Private Mullen. |
| 3. Private Curtis. | 3. Private Upham. |
| 4. Private Leahy. | 4. Private Moynahan. |

Guns 19 and 20, Corporal Howlett in charge:

- | | |
|---------------------|-----------------------|
| 1. Private Dugan. | 1. Private Guillermo. |
| 2. Private Leahy. | 2. Private Wilson. |
| 3. Private Fagan. | 3. Private Waters. |
| 4. Private Mueller. | 4. Private Peterson. |

One-pounders in fighting top, Acting Corporal Henderson in charge:

Starboard—

1. Private Fuller.
2. Private Moore.
3. Private King.

Port—

1. Private Pritchard.
2. Private Butts.
3. Private Sullivan.

Reserves, First Sergeant Bray in charge: Corporals Delaney, Work, Doss, and Boyd; privates Lintz, Donovan, Thomas, and Ayling.

Orderlies for the commanding officer: Privates Haight and Ellis.

Music stationed on superstructure.

R. DICKINS,
Captain, United States Marine Corps, Commanding Marines.

U. S. S. TEXAS (first rate),
Navy-Yard, New York, August 11, 1898.

SIR: I have the honor to submit the following report of the stations and services of the marine guard of this vessel on July 3, and other engagements participated in by the *Texas*:

Stations.—In the fore-top, 6 men, two 1-pounders; on forward superstructure, 6 men at two Hotchkiss revolving cannon; on forward superstructure, 5 men at 3-milimeter rapid-firing gun; in port and starboard waists, 6 men at two 1-pounders; on after superstructure, 6 men at two Hotchkiss revolving cannon; on after superstructure, 6 men at two Colt automatic guns; in main top, 6 men at two 1-pounders; 1 man at central station; 2 orderlies for commanding officer; 2 sentries in engine room.

In all the bombardments the men went to and remained at their stations. The *Texas* was in the bombardments of Santiago of June 6, 16, and July 2. On June 15 forced the mined entrance to Guantauamo (14-100 pound gun-cotton mine afterwards recovered) and reduced the fortifications. Without assistance silenced the Socapa battery on June 22, which had successfully withstood the combined fire of the west

ern squadron on the 6th and 16th. Played a conspicuous part in the destruction of the Spanish fleet on July 3, engaging the *Infanta Maria Teresa*, the first to leave the harbor, and was present at the successive surrender of the remaining vessels, including the *Cristobal Colon*, 50 miles to the westward of Santiago. Total secondary battery fire, 730 shots, the marines firing 330.

As all secondary battery guns were manned every night with two men of each crew, one man of each gun always on lookout, the service was hard but cheerfully performed. The regular post duty was in no way neglected. The guard of this vessel, by direction of Capt. J. W. Philip, U. S. N., was landed at Guantanamo on June 12 (taking ashore two Colt automatic guns), and assisted in the defense of Camp McCalla on June 12 and 13, the men behaving well under fire. The funeral escort, for the burial of Dr. Gibbs and two privates, remained at parade rest and perfectly cool under the stray firing of the Spanish sharpshooters.

The guard has done all that was required, and in a cheerful and satisfactory manner.

Very respectfully,

CYRUS S. RADFORD,
First Lieutenant, United States Marine Corps.

COLONEL COMMANDANT UNITED STATES MARINE CORPS,
Headquarters, Washington, D. C.

[First indorsement.]

U. S. S. TEXAS,
Navy-Yard, New York, August 12, 1898.

Forwarded approved.

The performance of all duty of the marine guard under command of Lieutenant Radford met with my approval and commendation.

Besides their work at the secondary battery in all engagements, I desire to call attention to special instances:

During the chase on July 3 it was reported to me that the firemen and coal heavers were giving out, and the engineers desired more men from the deck. The main battery having been already drawn upon for this extra work, I directed Lieutenant Radford to detail 15 or 20 men to go in the fire room to shovel coal. Immediately, and with a rush to be first, all the marines started for the fire room to aid the *Texas* to maintain her speed in the chase.

On arrival in Guantanamo Bay, June 12, Colonel Huntington asked that the guard of the *Texas* be sent ashore to reinforce and assist his command. It was landed at once, and on arrival on the hill I noticed it was stationed on picket duty immediately and under fire at once.

The valuable service rendered by Lieutenant Radford on the 12th and 13th was later especially commended to me by both Commander McCalla and Colonel Huntington; and in this connection I desire to call attention of the colonel commandant not only to the gallant conduct of Lieutenant Radford, but to the fact that he has the distinction of being the only officer in the Marine Corps who has done service both ashore and afloat during this war, a fact that should be brought to the attention of the Navy Department for its consideration.

J. W. PHILIP,
Captain, United States Navy, Commanding.

[Second indorsement.]

NAVY-YARD, NEW YORK, *August 12, 1898.*

Forwarded.

F. M. BUNCE,
Rear-Admiral, U. S. N., Commandant, Navy-Yard and Station.

[Third indorsement.]

HEADQUARTERS UNITED STATES MARINE CORPS,
Washington, D. C., August 22, 1898.

Respectfully referred to the Secretary of the Navy, inviting attention to the attached report and indorsement, and requesting the return of the papers to this office.

CHARLES HEYWOOD,
Colonel, Commandant.

U. S. FLAGSHIP BROOKLYN.
Guantanamo Bay, Cuba, July 3, 1898.

SIR: I have the honor to submit the following report of the part taken by the marine guard of this vessel, on the 3d instant, in the action which resulted in the destruction of the Spanish squadron.

At the moment the alarm was given that the enemy's ships were coming out of the harbor, the guard was at quarters ready for inspection. It was immediately dismissed and the men sent to their stations for battle.

The distribution was as follows:

Six pounders: 2 sergeants, 1 corporal, 13 privates	16
One pounders: 1 sergeant, 1 corporal, 10 privates	12
Colt automatic guns: 1 sergeant, 1 corporal, 10 privates	12
Signals: 2 music, 4 privates	6
Battle orderlies, 8 privates	8
Flag orderly, 1 private	1
Commanding officer's orderly, 1 private	1
Ammunition and fire party, 10 privates	10
Commanding and supervisory: 1 captain, 1 lieutenant, 1 first sergeant	3
Total (full strength of guard	69

The men were full of enthusiasm, but there was no excitement or disorder, and apparently no concern for personal safety.

The battery was handled with admirable coolness and deliberation. Greater care could not be taken in setting sights and aiming if the men had been at target practice and each striving to make a record score.

Considering the fact that the enemy was within effective range during the greater part of the action the fire of the secondary battery must have been most destructive to his men and material, and contributed its full share to bringing the battle to an end so speedily and with so little loss to ourselves.

It is reported that Spanish officers have stated that so deadly was the effect of our secondary battery fire it was impossible to keep their men at the guns.

Where all did their duty manfully it is a difficult matter to select individuals for special mention. There are some, however, who deserve to be brought to your notice by name for conduct that displayed in a conspicuous manner courage, intelligence, and devotion to duty.

During the early part of the action a cartridge jammed in the bore of the starboard forward 6-pounder, and in the effort to withdraw it the case became detached from the projectile leaving the latter fast in the bore and impossible to extract from the rear. Corpl. Robert Gray, of the port gun, asked and received permission to attempt to drive the shell out by means of the rammer. To do this it was necessary to go out on the gun, and the undertaking was full of difficulties and danger, the latter due in a great measure to the blast of the turret guns firing overhead. The gun was hot, and it was necessary to cling to the jacob ladder with one hand while endeavoring with the other to manipulate the long rammer. After a brave effort he was forced to give up, and was ordered in. Quarter Gunner W. H. Smith then came, sent by the executive officer, and promptly placed himself in the dangerous position outside the gun port, where he worked and failed as the corporal had done. Neither had been able to get the rammer into the bore, and there seemed nothing left to do but dismount the gun. At this juncture Private Macneal, one of the crew, volunteered to go out and make a final effort. The gun was so important, the starboard battery being engaged, that as a forlorn hope he was permitted to make the attempt. He pushed out boldly and set to work. The guns of the forward turret were firing, the blast nearly knocking him overboard, and the enemy's shot were coming with frequency into his immediate neighborhood. It was at this time that Chief Yeoman Ellis was killed on the other side of the deck. Macneal never paused in his work. The rammer was finally placed in the bore and the shell ejected. The gun was immediately put in action and Macneal resumed his duties as coolly as if what he had done were a matter of every day routine. The battle orderlies well merit a place among those whose conduct is worthy of special mention. They were on the move constantly bearing battle orders to all parts of the ship, and in no instance did they fail in the prompt and intelligent performance of their responsible duty. The signalmen occupied very exposed positions during the action and rendered excellent service. Signal halyards and numbers, battle flags and speed cones, were riddled by small projectiles and fragments of bursting shell, casualties that show in what a zone of danger the signalmen performed their duties. Signalmen Coombs and McIntyre and Battle Orderlies Rall and Davis were so near Yeoman Ellis when he was killed that they were bespattered with blood.

The following are the names of the battle orderlies: To the flag officer, Privates

Rall and Davis; to the commanding officer, Privates Kelly, Smith, and Sanjule; to the executive officer, Privates Brennen, G. Wismer, and P. O'Donnell.

The flag orderly, Private Richmond, and commanding officer's orderly, Private Woodsun, were on deck and rendered good service. The following are the names of the signalmen: Forward, Privates Coombs and McIntyre; aft, Privates Shaw and A'Hearne.

The music boys, Drummer Weisenberg and Fifer Stewart, were stationed on the main and gun decks, respectively, to sound trumpet calls, and behaved manfully. None showed more unflinching courage than the men in the military tops, who stood by their guns delivering their fire with unerring precision, undismayed by the projectiles flying about them and striking in their immediate vicinity. Private Stockbridge, the only man on the sick list, climbed into the main top at the signal for battle, where he remained to the end of the action, doing good work at his gun.

The noncommissioned officers, First Sergeant Manning, Sergeants Bristow, Montair, Ingalls, and McDevitt, Corporals Dittmeier, Doyle, and Gray, showed excellent soldierly qualities in the management of the men and battery.

First Sergeant Manning rendered valuable aid in supervising the widely separated detachments of the guard.

I can not speak too highly of the conduct and bearing of Lieutenant Borden. His courage and excellent services proved him a valuable officer.

There were no casualties of a serious nature. Two men were slightly injured, one, Private Flynn, in the back by a splinter; the other, Private Barfield, in the leg, cause unknown. In neither case was it necessary for the man to leave his station.

It is a matter of greatest pride to the guard, officers and men alike, to be able to claim a share in the splendid work done by the *Brooklyn* on the 3d instant.

A report nearly identical with this has been made to the commanding officer.

Very respectfully,

PAUL ST. C. MURPHY,
Captain, United States Marine Corps, Commanding Guard.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,
Headquarters, Washington, D. C.

[First indorsement.]

U. S. FLAGSHIP BROOKLYN,
Off Santiago, July 12, 1898.

Forwarded, approved.

F. A. COOK,
Captain, U. S. N., Commanding.

[Second indorsement.]

U. S. FLAGSHIP BROOKLYN,
Off Santiago de Cuba, July 15, 1898.

Respectfully forwarded. The conduct of the marine guard under Captain Murphy's command on the occasion of the destruction of the Spanish squadron on July 3, 1898, was in every way worthy of the accompanying report.

W. S. SCHLEY,
Commodore, U. S. N., Commander in Chief Flying Squadron.

U. S. FLAGSHIP NEW YORK,
Off Santiago de Cuba, July 16, 1898.

Respectfully forwarded.

W. T. SAMPSON,
*Rear-Admiral, Commander in Chief United States Naval Forces,
North Atlantic Station.*

U. S. FLAGSHIP NEW YORK,
Navy-Yard, New York, August 27, 1898.

SIR: In obedience to your directions, I have to report on the stations and services of the marine guard of this vessel on the occasion of the destruction of the Spanish fleet, July 3, 1898, as follows:

On July 3, 1898, the men went to their stations with much enthusiasm and were delighted at the prospect of coming to close quarters with the enemy. Privates William Rapp, William O'Neill, and Charles W. Berthold were on the sick list, but went to their stations for general quarters and performed their duties there.

The men at all times showed a commendable coolness while under fire.

Following is a list of stations of officers and men July 3, 1898, during the action with the enemy:

Name.	Rank.	Station.
Mende, R. L.....	Major	Commanding marine guard.
Lane, R. H.....	First lieutenant	In charge two 6 pounders No. 14.
Kinne	First sergeant	Rifleman, upper foretop.
Olinger, Charles	Sergeant.....	In charge marine ammunition (passers first division).
Boerger	do	In charge marine ammunition (passers second division).
Shira, James H	do	In charge marine ammunition (passers third division).
Erba, A.....	Corporal	No. 1, starboard 6 pounder No. 14.
Ludlow, Thomas.....	do	Rifleman, upper foretop.
Givens, William	do	Rifleman, maintop.
Walters, G. H.....	do	No. 1, port 6 pounder No. 14.
Shen, John J.....	Fifer	With executive officer.
Cassidy, J. P.....	Drummer	Forward spar deck.
Anders, C. C.....	Private	Rifleman, lower foretop.
Barkdale, M. S.....	do	No. 3, starboard 6 pounder No. 14.
Bartlett, C. H.....	do	Rifleman, upper foretop.
Benson, John B.....	do	Ammunition passer, first division.
Bernard, A. H.....	do	Orderly to commander in chief.
Berthold, C. W.....	do	No. 4, port 6 pounder No. 14.
Belster, M	do	Ammunition passer, fourth division.
Boaner, P. A.....	do	Ammunition passer, third division.
Bracken, E	do	Rifleman, maintop.
Brownlee, W	do	Aid to wounded, berth deck.
Demerita, C	do	Ammunition passer, third division.
Donohue, E.....	do	Ammunition passer, second division.
Donohue, T. J.....	do	No. 4, starboard 6 pounder No. 14.
Donovan, J. L.....	do	Ammunition passer, fourth division.
Doyle, Alfred	do	Rifleman, lower foretop.
Doyle, John.....	do	Ammunition passer, fourth division.
Foley, James J.....	do	Ammunition passer, third division.
Gill, Patrick	do	Rifleman, upper foretop.
Haisman, F. W	do	Ammunition passer, fourth division.
Hastings, J. C	do	Do.
Heath, F. W.....	do	Rifleman, upper foretop.
Hendershot, N. V.....	do	Ammunition passer, first division.
Hess, John	do	Do.
Horton, J. T	do	Ammunition passer, second division.
Hutchinson, J. C.....	do	No. 3, port 6 pounder No. 14.
Johnson, Benjamin	do	No. 2, starboard 6 pounder No. 14.
Kane, John	do	Rifleman, maintop.
Kearna, M	do	Ammunition passer, fourth division.
Kelly, John.....	do	Ammunition passer, third division.
Kelly, Thomas.....	do	Aid to wounded, berth deck.
Kenny, William	do	Ammunition passer, third division.
Knip, Adolph.....	do	No. 2, port 6 pounder No. 14.
McGovern, James	do	Ammunition passer, fourth division.
Morgan, Daniel.....	do	Rifleman, lower foretop.
Newton, C. E.....	do	Ammunition passer, third division.
O'Hara, E.....	do	Do.
O'Sell, William.....	do	Ammunition passer, first division.
Penny, Edw	do	Ammunition passer, second division.
Pettitlerc Edw	do	Do.
Power, M	do	Orderly to commanding officer.
Prescott, H. G	do	Rifleman, maintop.
Putney, B. C	do	Ammunition passer, third division.
Rapp, William.....	do	Ammunition passer, first division.
Ross, Albert.....	do	Ammunition passer, fourth division.
Sauer, William	do	Ammunition passer, second division.
Shen, John.....	do	Ammunition passer, first division.
Smith, F. M.....	do	Ammunition passer, third division.
Smith, James	do	Rifleman, lower foretop.
Smelt, M.....	do	Ammunition passer, first division.
Sullivan, James.....	do	Do.
Sprowla, M	do	Do.
Vaughan, R. H.....	do	Ammunition passer, third division.
Walter, R. F.....	do	Rifleman, upper foretop.

The ammunition passers were subject to call as riflemen.

The stations during the engagement at San Juan with the shore batteries, May 12.

1898, were the same as given above, with the exception of the following men, who had the stations given opposite their names:

Name.	Rank.	Station.
Meade, R. L.....	Major.....	Marine officer of the fleet.
Goodrell, M. C	Captain	Commanding marine guard.
Kinne, F. A	First sergeant	In charge of top ammunition.
Bernard, A. H	Private	Ammunition passer, first division.
Power, M .....	.....do	Ammunition passer, second division.

Private William Rapp was slightly wounded by a fragment of a shell at San Juan. The stations during the different engagements with shore batteries were practically the same as at San Juan. The services of the marines of this vessel were on each occasion efficient. In addition to their regular duties the marines furnished parts of prize crews, patrol launch crews, stood watch at the guns, and were posted as armed lookouts for torpedo boats.

Very respectfully,

RUFUS H. LANE,
First Lieutenant, United States Marine Corps, Commanding Marine Guard.

The COMMANDING OFFICER,
U. S. S. New York.

U. S. FLAGSHIP NEW YORK (first rate),
Navy-Yard, New York, September 2, 1898.

SIR: I have the honor to acknowledge the reception of your letter of August 29. The officers and men of the marine guard on board this ship at all times in action did their duty most creditably. I have nothing but praise for their conduct and bearing at any time when engaged or when there was a prospect of engagement.

Very respectfully,

F. E. CHADWICK,
Captain, U. S. N., Commanding.

Lieut. Col, R. L. MEADE,
Commanding Marines, Navy-Yard, Portsmouth, N. H.

U. S. S. INDIANA (first rate),
Off Tompkinsville, N. Y., September 1, 1898.

SIR: In accordance with the request contained in the letter of the colonel commandant, United States Marine Corps, under date of August 9, I have the honor to submit the following report:

The marines of this ship are stationed for battle as follows: 24 manning port 6-pounder rapid-fire guns on superstructure deck; 20 in powder division passing rapid-fire ammunition; 2 orderlies to commanding officer; 1 signalmen; 2 orderlies passing ranges on orlop deck; 1 central telephone station; 2 in top, assisting in range-finding and indicating; 8 on search lights (at night); 15 in reserve as riflemen and as supports and reserves for rapid-fire guns.

First Lieut. W. C. Dawson is stationed on the bridge with the commanding officer, acting as signal officer.

By direction of the commanding officer I have charge of all the rapid-fire guns on the superstructure and bridge decks with the exception of 2, making, in all, 16 guns.

The marines took part in all the engagements in which the ship participated: San Juan de Puerto Rico, May 12; Santiago de Cuba, June 22, July 2, July 4, and the destruction of the Spanish fleet on July 3. The bombardments of the city of Santiago de Cuba were carried on by the great guns, and the marines took no part in the firing. In all picket boats on duty at the mouth of Santiago Harbor there were detachments of marines.

Practically, since a day or two after the destruction of the *Maine*, this ship has been on a war basis, and all precautions observed in time of war have been carried out. In all of the wearing and wearying watch duty, all war work, both in preparation for and during actual warfare, the marines willingly and cheerfully took part, performing the many duties required of them so well that, during the time of preparation and war, there were only two cases of dereliction of duty; and at all

times meeting with the approval and gratification of the commanding officer, who has stated to me that he regarded our men as the best in the squadron.

I can not mention specific cases of duty performed in a markedly superior manner when all did so well.

On July 2, during the attack on the forts at Santiago, the marines did all the firing at the eastern battery and Morro. This firing was so accurate and controlled as to draw strong expressions of admiration and approval from the commanding officer and the officers of other ships. For three days prior to this fight all the marines except the orderlies and noncommissioned officers were, with the crew, coaling ship, only completing the work at midnight on the 1st of July, in time to get under way, leave Guantanamo Bay and reach Santiago in the early morning, to go into action without time to wash the coal dust off their persons. They went into the fight with such spirit and showed such qualities of discipline and precision as to draw forth a special order from the commanding officer commending seamen and marines for their fine work.

On this occasion the marines fired 570 shots with splendid accuracy.

On the occasion of the destruction of Cervera's fleet, the rapid-fire battery of this ship fired 1,744 shots in about sixty-five minutes; of this number, 1,534 were fired by the guns under my charge, a little more than a third of this number being fired by the marines.

While the marines were stationed at the port battery, and the starboard battery was engaged on that occasion, the fire was so rapid and sustained, the shock of explosion and the blinding smoke from the 8 and 6 inch guns were so great, that it was necessary frequently to relieve the crews of the starboard with the marines from the port. The only trouble experienced at the time was the difficulty in keeping the men actually engaged under cover; they would creep up to the guns, waiting for the chance to take part in the action.

The condition of the *Oquendo* and *Teresa* after the action, together with the rapid destruction of the torpedo-boat destroyers, attest the accuracy of the fire of the rapid-fire batteries. The statement made at Norfolk by Captain Conchas, of the *Teresa*, to the effect that he could not keep his men at the guns or send messages and orders on account of the terrific fire from the rapid-fire guns of the three eastern ships of the squadron is a further proof of the accuracy and rapidity of fire of these guns.

Captain Conchas stated in conversation with civilians that his ship was destroyed by the fire of the three first ships a few moments after leaving the channel and turning to the westward.

As I have previously stated, I can not mention any special instances of extraordinary conduct on the part of the men during the several engagements in which they participated; they have at all times and under all circumstances performed their duties faithfully and well, meeting with the approval of all.

In the case of Lieutenant Dawson, I can not speak of his conduct during any of the action from personal observation, as he was on the bridge with the commanding officer.

In all the preliminaries and preparations for war Lieutenant Dawson has been responsive and indefatigable in the discharge of his duties. I can not speak with too much praise of his capacity and interest.

I must leave to my seniors to say whether or not I performed my duties satisfactorily and well.

Very respectfully,

LITTLETON W. T. WALLER,

Captain, United States Marine Corps, Commanding Marines.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,

Washington, D. C.

[First indorsement.]

TOMPKINSVILLE, N. Y.,

September 8, 1898.

Respectfully forwarded.

The conduct of the marines equaled in excellence that of the other divisions of the ship. All divisions of the ship, including the marines, behaved admirably in all the various engagements of the war.

In the destruction of Cervera's fleet the marines fired about 500 shots from the secondary battery of the ship, about 1,200 being fired by the seaman division. The smaller number fired by the marines was caused by their having the port battery of 6-pounders, while the starboard battery was the one engaged. The accuracy of the 6-pounders fired both from the seamen and the marines was exceptionally good.

With reference to the marine officers of the *Indiana*, their conduct was equally deserving high praise and commendation with the officers of the other divisions of the ship.

H. C. TAYLOR,

Captain, U. S. N., Commanding.

[Second indorsement.]

U. S. FLAGSHIP NEW YORK (first rate),
Navy-Yard, New York, September 20, 1898.

Respectfully forwarded.

J. W. PHILIP,
Commodore, U. S. N., Commanding Second Squadron, North Atlantic Fleet.

SMALL-ARMS FIRING INSTRUCTIONS, UNITED STATES MARINE CORPS.

HEADQUARTERS UNITED STATES MARINE CORPS,
Washington, D. C., December 29, 1897.

As the subject of rifle firing is of the utmost importance to the Marine Corps, it is desirable that no effort or pains shall be spared by the commanding officers and other officers at the different stations to advance the qualifications of their commands in this respect; and to this end it is necessary that a uniform system of instruction shall be pursued at all stations.

For the purpose of carrying out the requirements of Special Order No. 48, Navy Department, July 20, 1896 the system of instruction prescribed in the Small-Arms Firing Regulations as modified by these instructions relative to target firing in the United States Marine Corps, and General Order No. 36, War Department, June 11, 1897, will be strictly carried out.

Thorough and detailed instruction in the composition of the piece, in taking it apart and reassembling it, and in aiming and sighting drills should be imparted to officers and men, followed by practice in the gallery in individual and volley firing, by careful training in skirmish runs on the drill ground, succeeded finally by range practice, supervised with the same care. To this end the first five months of the target year beginning November 1, 1897, will be devoted to theoretical instructions and preliminary drills and exercises. In order that these drills and instructions may be conducted to advantage, they will replace, as far as practicable during that period, the ordinary drills and exercises, which, for this purpose, can be materially relaxed.

All officers will make themselves familiar with the use of the rifle, and with the system of instruction adopted, as well as with the regulations for carrying out the practice in the gallery and at the ranges. The commanding officer will, therefore, during the season mentioned, assemble the company officers at least twice a week for theoretical instruction, which he will conduct personally. In the absence of the commanding officer, on duty, or leave, or on account of sickness, such instructions will be conducted by the officer next in rank present. The noncommissioned officers will also be thoroughly instructed during the same period by the company officers, and to this end commanding officers will organize their respective commands into companies.

The practice season will be from the 1st of April to the 1st of November. During this season the regular practice will be held until the prescribed course is completed, and all officers and enlisted men will attend each regular practice, unless unavoidably prevented. Recruits who join too late to take part in firing during practice season will be instructed in position and aiming drills and gallery practice during the first three months of their service, and, if practicable, will be taken on the range for record practice before the close of the target year.

It is necessary to fair and intelligent classification and reward of merit that competition throughout the corps should be conducted under, as nearly as possible, like conditions, and it is therefore important that gallery practice should be upon ranges of the same distance, and from like positions, standing, sitting or kneeling, and laying down.

Practice in the gallery and on the range must be under supervision of a commissioned officer, and range practice, when practicable, will be under the supervision of the inspector of rifle practice, who will, when present, be in charge of the range.

No man shall be permitted to fire on the range until he has had a thorough course of instruction in the preliminary drills, and has attained an average of 80 per cent in his best two full scores in gallery practice.

A man having attained the required percentage in gallery practice to enable him to fire on the range will be required to fire, during the practice season, a total number of shots not exceeding the allowance prescribed in General Order No. 36, War Department, June 11, 1897, for the distance at which fired.

Preliminary practice will be held as prescribed in General Order No. 36, War Department, June 11, 1897, except that the preliminary firing, at all distances required in record firing, may be held before beginning the record firing.

Record firing will follow the rules prescribed in General Orders, No. 36, chapter 2,

except that the men will not necessarily be required to complete their practice at each range before commencing practice at the next longer range. Firing for classification will also be limited to 200, 300, 500, and 600 yards, except as provided for in paragraph 12.

When practicable, skirmish and volley firing will be held and also long-distance firing up to and including 1,000 yards. Such firing will be made a part of the soldier's record, but will not be necessary for classification.

At stations where facilities for target practice do not admit of firing at all distances necessary to qualify a person for classification as sharpshooter, anyone attaining 80 per cent in his best four full scores in the gallery and 84 per cent in his best two full scores on the range at all distances available of and above 200 yards will, the exigencies of the service permitting, be transferred to a station that will afford him the facilities for qualifying for classification.

Any man who desires may, in the discretion of the commanding officer, be allowed more than the prescribed amount of target practice on the range for the purpose of acquiring classification, and for such purpose may purchase the ammunition necessary from the officer in charge at cost price.

Classification.—The class in firing to which any officer or enlisted man belongs will be determined from the aggregate of the best two full scores he has made on the range, but if discharged or transferred, or if he has completed his course before leaving the post, he will be classified according to the aggregate obtained. Whenever a man is transferred or discharged the record of his best two full scores in the gallery and his best two full scores on the range shall be entered under "Remarks" on his descriptive list, these scores to be credited to him in subsequent practice for classification.

Sharpshooter.—One who in record practice fires two or more full scores at each distance of 200, 300, 500, and 600 yards, and from the best two of such scores makes an average of 84 per cent of the possible aggregate score, or where the best two of such scores, together with his record in skirmish firing (if any), makes an average of 74 per cent of the possible aggregate score.

Marksmen.—One firing as above stated at 200, 300, 500, and 600 yards, and from the best two of such scores makes an average of 74 per cent of the possible aggregate score, or where the best two of such scores, together with his record in skirmish firing (if any), makes an average of 64 per cent of the possible aggregate score.

First class.—One firing as above stated at 200, 300, 500, and 600 yards, and from the best two of such scores makes an average of 64 per cent of the possible aggregate score, or where the best two of such scores, together with his record in skirmish firing (if any), makes an average of 54 per cent of the possible aggregate score.

Second class.—One firing as above stated at 200, 300, 500, and 600 yards, and from the best two of such scores makes an average of 54 per cent of the possible aggregate score, or where the best two of such scores, together with his record in skirmish firing (if any), makes an average of 44 per cent of the possible aggregate score.

Third class.—All who in record practice fail to make the necessary per cent for the second class.

Although on account of the difficulty of obtaining ranges at most of the stations in the Marine Corps exceeding 600 yards, this distance is made the limit of firing for classification under present circumstances, and for like reasons it has been necessary to omit skirmish firing as necessary to classification, it is important that at any station where opportunity is afforded for longer distance and skirmish firing the same should be had, and to this end the following rules for classification, in addition to those above are established:

Sharpshooter.—One who in record practice fires two or more full scores at each distance of 200, 300, 500, 600, 800, and 1,000 yards, and from the best two of such scores makes an average of 76 per cent of the possible aggregate score, or where the best two of such scores, together with his record in skirmish firing, makes an average of 70 per cent of the possible aggregate score.

Marksmen.—One firing as above stated at 200, 300, 500, 600, and 800 yards, and from the best two of such scores makes an average of 70 per cent of the possible aggregate score, or where the best two of such scores, together with his record in skirmish firing, makes an average of 64 per cent of the possible aggregate score.

REVOLVER FIRING.

As revolver firing constitutes an important feature in small-arms target practice of the marine guards of ships at sea, careful attention will be given this matter at each shore station, and thorough instruction of officers and enlisted men is required. The rifle gallery will afford a proper place for revolver practice by using for a target an iron or steel plate of sufficient size and thickness for such purpose.

This practice will be conducted as prescribed in part 8, chapter 1, Small-Arms

Firing Regulations, except that in record firing for classification the distance will be 75 feet, and the number of shots for a single score six, and the percentage for the different classes as follows:

First class.—One who in record practice fires two or more full scores at an A target, 75 feet distant, and from the best two of such scores makes an average of 80 per cent of the possible aggregate score.

Second class.—One firing as above stated, and from his best two full scores makes an average of 60 per cent of the possible aggregate score.

Third class.—One firing as above stated, and from his best two full scores makes an average of 50 per cent of the possible aggregate score.

Fourth class.—All who fail to make the necessary percentage for third class.

In revolver practice the score will be kept and monthly and annual reports transmitted upon appropriate forms, in the same manner as in rifle practice.

The allowance and expenditure of ammunition will be strictly in accordance with paragraph 870, General Orders, No. 36, War Department, June 11, 1897. Men firing their yearly allowance of ammunition at one post will not be allowed to fire again at another station during that target year, except as provided in paragraph 14, page 6, of these instructions.

Score cards.—At each regular practice the commanding officer of each detachment participating will furnish to the officer in charge of the party engaged in the practice a score card, inscribed with the names of the officers and men present. At the close of the practice the officer in charge will return the score cards to the commanding officer, with the score of each officer and enlisted man thereon in ink, or with an indelible pencil, and certified to by him. In making out score cards, each space between the lines will be used, although it may be necessary in so doing to enter the record of the firing of different parties, or the record of firing on different days on the same score card.

Target record book.—This book will give the individual record of every officer and enlisted man attached to the post. It will be made by transcribing from the certified score cards the record of each man at every regular practice.

Monthly report.—This report will be made on the last day of each month, as per Form A. It will contain the name of every officer and enlisted man who has been borne on the rolls of the post during the month, except those who have qualified to fire on the range and have not fired in the gallery during the month, and will give the totals of the best two full scores in the gallery, and the best two full scores on the range, of each officer and enlisted man at all distances available from 200 yards to 600 yards, inclusive. It will be accompanied by the original and duly certified score cards as vouchers.

In order that the extent of instruction and the relative proficiency of the different stations may be accurately known, an annual report of all record practice, in the gallery and on the range, will be made as per Form B at the close of the practice season, October 31, of each year. This report will show the total number of men firing each month and the average per cent of record scores at the different ranges. The classification of all men for each month will also be shown, and from these reports will be compiled and published annually the relative standing of proficiency in target firing of the different stations, at the distances fired.

Blank forms for score cards and reports of target practice will be furnished by the adjutant and inspector, United States Marine Corps.

CHARLES HEYWOOD,
Colonel Commandant.

REPORT OF PROCEEDINGS OF SCHOOL OF APPLICATION.

HEADQUARTERS SCHOOL OF APPLICATION,
UNITED STATES MARINE CORPS, MARINE BARRACKS,
Washington, D. C., April 18, 1898.

SIR: I have the honor to report that the graduating professional examinations of the officers attached to the school of application have been completed. The averages attained by the officers for the scholastic year just expiring are as follows: First Lieut. C. A. Doyen, 98 per cent; Second Lieut. P. M. Bannon, 80.42 per cent; Second Lieut. N. H. Hall, 90.24 per cent.

The enlisted men's division, which originally consisted of 9 sergeants, 9 corporals, and 25 privates, has, through the exigencies of the service, been reduced to 2 sergeants, 2 corporals, and 2 privates, as follows: Sergts. Emil Cinyburg and Joseph Kennedy, Corpls. Louis Spero and San Jose Fralick, Privates Thomas Nolan and Bryan McSweeney. These men have been reported by Lieutenant Long, the instructor of the enlisted men's division, as having passed a satisfactory examination,

I therefore respectfully forward certificates of graduation for the officers and certificates of proficiency for the enlisted men.

Very respectfully,

F. H. HARRINGTON,

Captain, United States Marine Corps, Commanding and Tutor of Instruction.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,

Washington, D. C.

LETTERS COMMENDING PRIVATE WILLIAM ANTHONY.

NAVY DEPARTMENT,

Washington, D. C., April 8, 1898.

SIR: I desire to call the attention of the Department to the soldierly conduct of Private William Anthony on the occasion of the explosion of the *Maine*. At the time of the explosion I was in the captain's cabin of the *Maine*. The lights of the vessel were instantly obscured and the apartments were filled with smoke; there was immediate and intense darkness. On leaving my cabin through the usual passage forward, feeling my way along, I was met near the outer door of the superstructure by Private Anthony, who was coming into the cabin to fulfill on that dangerous occasion, the precise duties of his position by notifying me of the explosion. He ran against me in the darkness, apologized hastily, and reported to me that the ship had been blown up and was sinking. We then proceeded together to the quarter deck.

The special feature in the case of this service performed by Private Anthony is that, on an occasion when a man's instinct would lead him to seek safety outside the ship, he started into the superstructure and toward the cabin, irrespective of the danger. The action was a noble one, and I feel it an honor to call his conduct to the attention of the Navy Department with the recommendation that he be made a sergeant.

Very respectfully,

C. D. SIGSBEE,

Captain, United States Navy, lately Commanding the U. S. S. Maine.

The SECRETARY OF THE NAVY.

Washington, D. C.

NAVY DEPARTMENT,

Washington, D. C., April 9, 1898.

SIR: The Department is in receipt of a letter from Capt. C. D. Sigbee, U. S. N., of date April 8, 1898, calling attention to your conduct on the occasion of the disaster to the *Maine*.

In transmitting to you a copy of this letter the Department is glad to add its expression of commendation. Your courage and fidelity to duty at the time of the explosion, as detailed by Captain Sigbee, was most commendable. Your conduct was a credit to the naval service, and entitles you to the hearty thanks and approval of the Department.

Very respectfully,

JOHN D. LONG,

Secretary.

Private WILLIAM ANTHONY,

United States Marine Corps.

ANNUAL REPORT OF THE ADJUTANT AND INSPECTOR, UNITED STATES MARINE CORPS.

HEADQUARTERS UNITED STATES MARINE CORPS,

ADJUTANT AND INSPECTOR'S OFFICE,

Washington, D. C., September 27, 1898.

SIR: I have the honor to submit the following report for the information of the colonel commandant:

From the close of the civil war the Marine Corps was from time to time reduced in both officers and enlisted strength until it reached the minimum of 1 colonel commandant, 1 colonel, 2 lieutenant-colonels, 4 majors, 20 captains, 30 first lieutenants, 12

second lieutenants, 5 commissioned staff, and 2,000 enlisted men, including band and field music. This reduction corresponded with the gradually diminishing requirements of the Navy, which reached its minimum strength in ships and men about 1885, from which time the steadily growing demands for marines, occasioned by the constantly increasing number of new ships of the Navy and the establishment of new shore stations, finally rendered imperative the increase of the Marine Corps, when, by the appropriation act of March 2, 1889, 100 privates were added to the strength of the Corps. Again, by the act of June 10, 1896, 500 additional enlisted men were appropriated for, but no increase of officers was provided. By the appropriation act of May 4, 1898, a still further increase of 473 privates was provided for, bringing the enlisted strength of the Corps up to 3,073, the full number then allowed by law, and a total increase of over 1,000 enlisted men, without the addition of a single commissioned officer, thus constituting a military body out of all proportion, as regards officers and enlisted men, based upon the requirements of military organizations as provided by Congress for the Army of the United States, though a bill to increase the efficiency and equalize the grades of officers of the Marine Corps has been repeatedly introduced in Congress, and one prepared by the present colonel commandant, having the approval of the present Secretary of the Navy, was then before Congress for consideration.

Immediately after the authorization of the 473 enlisted men referred to, the status of the Marine Corps, as to its strength, was still 1 colonel commandant, 1 colonel, 2 lieutenant-colonels, 4 majors, 20 captains, 30 first lieutenants, 12 second lieutenants, and 5 commissioned staff to 3,073 enlisted men, a force more than equal to three full regiments of twelve companies each, or one full brigade of infantry on a war footing, and, under the law providing for the organization of the infantry of the Army, would have required as its proper and necessary complement of officers 1 brigadier-general, 3 colonels, 3 lieutenant-colonels, 6 majors, 36 captains, 42 first lieutenants, 36 second lieutenants, and the proper and necessary staff officers for the different staff departments. It must be presumed that the organizations provided by law for the different corps of the Army are necessary to their efficiency, and the Marine Corps being essentially an infantry corps, though performing as well their parts as gun's crews aboard ship, and thus increasing their sphere of importance in this respect as artillerists, should have at least the full complement of officers of the infantry organizations of the Army, whereas this Corps, at the beginning of the present war, and when it was called on for service in the field in a foreign country, was deficient in the proper and necessary complement of officers to the extent of 1 general officer, 2 colonels, 1 lieutenant-colonel, 2 majors, 16 captains, 12 first lieutenants, and 24 second lieutenants. Only a day or two previous to the passage of the last naval appropriation bill heretofore referred to, a further provision was inserted in said act authorizing the appointment in the Marine Corps of such officers (not above the grade of captain) for service during the war with Spain as the Secretary of the Navy might deem requisite, and the addition to the enlisted strength of the Corps of 60 gunnery sergeants, 80 corporals, and 1,500 privates. Under such provision there have been up to the present time 43 additional second lieutenants appointed—40 from civil life and 3 from noncommissioned officers in the Corps, and the enlistments under said provision have been 472.

It was intended by the colonel commandant that the 60 gunnery sergeants should be in addition to the present number of sergeants, and that they should have the rank of first sergeant, with \$15 per month additional pay; but through some oversight this provision was omitted in the passage of the act, and it is hoped that the same may be remedied in the appropriations for the coming year. Within four days from the receipt of the order for the mobilization of the first battalion of marines for service with Admiral Sampson's fleet in Cuban waters, 6 companies, numbering 23 commissioned officers and 623 enlisted men, had been assembled at the marine barracks, Brooklyn, N. Y., from all of the different Eastern shore stations, organized, fully armed and equipped in every respect, embarked on board their transport, and were on their way to report to the commander in chief of the North Atlantic Fleet for service in Cuba, where, at Guantanamo, they were the first United States troops to plant and maintain the flag of their country on the enemy's soil. That the services of this battalion were of a character to merit appreciation is attested by the encomiums it received from the public and the recognition bestowed on its officers by the Government. Though the resolution of thanks to the officers and enlisted men of the first battalion, introduced in Congress on the last day but one before adjournment, failed of its passage through lack of time, other acts of recognition of their gallant services have since been shown in the promotion of its commanding officer, Col. R. W. Huntington, and the advancement and brevetting of a number of other officers of the battalion.

The recognition of the services of the marines in the present war has, however, not been confined to those of the first battalion, for the services of marines on board ship have in many instances received commendation and recognition, especially those

on the ships which destroyed German's fleet at Santiago, in which the secondary batteries are said to have played a great part. It will therefore have so far been furnished during the war with the exception of 37 ships in commission, exclusive of the first marine battalion, the 2nd and 3rd battalions of the fleet, and marine guard at the island of Cuba. It will not be forgotten in the interests of the service that the different shore stations had to be manned by the 1st and 2nd battalions of the marine officer the marine battalion, and the 3rd battalion of the marine placed in commission, all but four of the 1st and 2nd battalions of the fleet, and all but three of the 3rd battalion of the fleet, leaving several stations with only one or two men, thus requiring the detail of a number of men to the commands of guards on board ships, and even to the most important shore stations, and thus showing the great importance of the service which has been so earnestly urged by the Chief of the Navy, and the Honorable Secretary of the Navy.

With the exception of a few months during the months of November and December, 1917, and January, 1918, the posts in the Marine Corps, including the supply depots, the recruiting offices, and the various other posts, have been very satisfactory. Owing to the fact that the posts in the Atlantic coast have been so depleted in some cases as to leave in some cases no officers or enlisted men, the commanding officers have made only a casual visit of inspection as to the general condition of the posts was made by the adjutant and inspector during the month of August. The commanding officers of the posts and the officers and men having a great measure of responsibility for the different stations, a thorough inspection of all the posts in the Atlantic coast has been made. Much has been done by the commanding officers of the posts in the past year to improve the condition of most of the posts in the Atlantic coast, and it is also that of the grounds and other facilities at the different posts. The posts in the Atlantic coast for this department appear to have been in a very satisfactory condition. The reports at the Brooklyn barracks have been of a very satisfactory character, and it is believed that when fully completed they will give a very satisfactory impression that it has been for many years. The barracks at Brooklyn have been added an additional story, thus giving the greater number of additional space and which will greatly conduce to the comfort and convenience of the officers and enlisted men. At the Fort Mifflin station new barracks and officers' quarters are under construction, and when completed, will afford comfortable and convenient quarters for both officers and enlisted men of that station. The barracks at the Fort Mifflin station, the commanding officer have been completed at the station. Fort Mifflin has also much-needed improvements in the grounds and other facilities. The demands upon the supply department at Fort Mifflin during the present war have been very great, and it is believed that the facilities there and an increase of the personnel there will be able to do this department for the maintenance of the various facilities of the service, as well as the emergencies of the war. In the case of supplies, arms and munitions, clothing, etc., were met.

ARMY AND AIR FORCE

I am of the opinion that it would be advantageous to the service in more ways than one if the arms, accoutrements, and equipments issued to a soldier were to be retained by him during his entire enlistment. Under the present method of transferring men from one station to another and from shore to ship, it is often the case that men are required to turn in their rifles, their accoutrements, and accoutrements, receiving new issues at the station to which they go. It has been my experience on numerous occasions, when drawing one of these articles in bad condition, for the soldier to excuse himself by saying that they were in this condition "when I got them;" and it is not only difficult, but generally impossible, to place responsibility for the bad care to which such articles have been subjected. If they were to remain in the soldier's possession from the time they were issued, any responsibility for their bad condition could be placed on him, and any good soldier would have a pride, aside from the responsibility imposed, in keeping the articles intrusted to his care in good condition.

The ballistic qualities of the 4 millimeter rifle are superior for field service. Some minor defects are noted. The extractor springs have frequently broken. The follower and trigger have sometimes broken. The gun, when loaded "empty chamber," opens easily on being struck by a branch when passing through woods, and when closed, loaded, an accident is liable to occur. The "stop" for taking out breechblock is liable to be misplaced, and results in the falling out of the extractor

and spring when the bolt is drawn back. The rifle is not sighted for the cartridge issued. The bayonet comes easily from the scabbard, and quite a number of them have been lost passing through woods.

The belts, bayonets, and scabbards are of satisfactory shape and material. It is found that the small eyelet holding belt suspenders together in the back has pulled out in a majority of cases, and it is recommended that a sliding metal buckle be substituted. This should be movable, for the reason that men, in carrying 180 rounds of ammunition, prefer the belt much higher on the body than when empty. It is suggested that belt suspenders be made in future to conform in color to equipment, as the contrast of broad, black belt and suspenders worn over any campaign suit is very marked, even at long distances. The knapsacks, haversacks, and canteens have given entire satisfaction, and the color of equipments and straps is found to be excellent, as little contrast is shown between them and campaign suits and not visible at a distance.

CLOTHING.

A very material improvement has been made in the past year in the fit and quality of the clothing supplied the enlisted men. The introduction of intermediate sizes in coats and trousers has done much to enable men to be neatly fitted and has materially improved the soldierly appearance of the men generally. It is believed, from the progress that has been made in this respect, that a custom which I have always regarded as a necessary evil will to a great extent be eradicated; that is, the charge to which the enlisted man is generally subjected for the alteration of clothing issued to him by the Government. An examination of the statements made in the inspection reports of the commanding officers and officers in charge of clothing will show that at the different posts charges of from 50 cents to \$1.50 are made by the so-called post tailor for altering trousers; from 50 cents to \$1.25 for altering an undress coat; from 50 cents to \$1.50 for altering a full-dress coat, and from \$1 to \$1.50 for altering an overcoat. It is not possible that a perfect fit can in every case be secured in the articles drawn by the soldier, and the necessity for alteration in some cases is unavoidable, if you would have a neat and soldierly appearing man, but such necessity should be reduced to a minimum. I am of the opinion that the fit of clothing at the time of issue to enlisted men should always be under the careful supervision of an officer, and that due diligence and interest in this respect will do much to remedy the evil of ill-fitting coats and trousers and avoid much of the necessity for patronizing the post tailor, and thereby obviate an unnecessary expense to the soldier.

Considerable complaint has been made to me in the past four years by both officers and enlisted men of the liability to change in color of the light-blue trousers and overcoats. This subject has been very carefully and thoroughly gone into by the quartermaster's department, and all possible means apparently taken to remedy the defect; but I am convinced in my own mind that the same can not be entirely overcome, and that any light-blue cloth which can be made will, to some extent, change to a lighter hue when subject to light and wear for any considerable time.

SHOES.

Much attention has been given by the quartermaster's department to the subject of a suitable shoe for enlisted men, until finally a shoe has been adopted which, from unofficial reports, seems to meet the requirements of the service, having given great satisfaction in the first battalion in Cuba, and it is believed will be the article which has so long been sought for. I am of the opinion that the bad wearing quality complained of in the past has been due in some measure to the fact that shoes kept in the storeroom for a considerable time deteriorate by the drying out of the oil in the leather, so that when worn in the wet the leather rapidly becomes saturated and easily goes to pieces, though I do not suggest this fact as accounting entirely for the lack of durability found in the Government shoe, as a rule, in the past.

DRILL.

The lack of established drill regulations, together with the withdrawal of the majority of the troops from all of the Eastern posts of the Corps, has retarded to a great extent any drills except in squad and company formation. Battalion drill has been almost entirely suspended, but it is expected that when the posts are again garrisoned with their full complement of men instruction in all drills and exercises required by the regulations will be earnestly resumed.

TARGET PRACTICE.

The most satisfactory results have been attained in target practice during the past year at posts where it was possible to have long-distance firing, which is shown by

the fact that out of 760 men who competed during the season just ended 247 qualified as sharpshooters and 189 qualified as marksmen, which is certainly most gratifying, considering the fact that the work of target practice is as yet in its infancy in the Marine Corps. The thorough instruction of the soldier in the preliminary drills and in gallery practice before attempting long-distance firing can not be overestimated. I believe that the Revised Instructions for Small Arms Firing in the Marine Corps, promulgated by the colonel commandant in December last, will effectually meet the requirements of our service, and if faithfully carried out at all the different stations where opportunity permits will result in advancing the Marine Corps to a position second to no other military organization in the United States service as a body of marksmen. At no stations, except Annapolis, Newport, and Mare Island, is it practicable to establish ranges immediately at the posts, but last year's experience has shown that suitable long-distance ranges, within easy reach of stations, can be rented by the season, thus affording facilities for pursuing the important work of target practice at many, if not all, of the posts in the Marine Corps. This subject deserves our most earnest attention in the future, and it is hoped that the excellent record made by the Marine Corps during the present war will show the necessity of acquiring all the needed facilities for carrying on this work at every post in the Marine Corps during the coming target year, not only with respect to small arms, but in practice with rapid-fire and machine guns of small caliber, or such as can be supplied with subcaliber appliances for target practice on the different ranges.

RECRUITING.

During the past year recruiting has progressed very satisfactorily until within the last three months, during which time a very noticeable decrease in the number of applicants for enlistment has occurred. The character of recruits has been exceptionally good. The question of a probationary period of enlistment for six months, with option on both the part of the recruit and the Government as to continuance in the service at the expiration of that period, has been suggested by many officers, and I am of the opinion that the practical effect of such a system would be found in the diminishing of the number of desertions, the improvement of discipline, and the contentment of those who remain the full term of service. Under present circumstances many young men enlist, through lack of employment, who are illy adapted to the service, and who after their wants have been temporarily satisfied grow tired of the restraints of the service and seek release by deserting, rather than pay the sum required to purchase their discharge. It is believed by many that a law providing for a probationary period of service for six months would in a great measure avoid any such cause of desertion and result in a considerable saving to the Government in the way of clothing, etc., as well as secure to the service (for the five-year term) a more contented and better class of men.

DESERTION.

The question of desertion is one that has received very careful consideration in the Army as to the causes thereof and the remedies to be applied to correct the same. It is not only generally difficult, but in many cases utterly impossible, to ascertain such cause; but the fact that in the Marine Corps the average length of service of all deserters for the past five years is only about seven months shows that these causes, as a rule, occur in the beginning of their term of enlistment. It is a gratifying fact that there has been a very material decrease in the number of desertions of late years, and for the past year a decrease of about 50 per cent, yet the subject is one that will always merit careful consideration.

From as thorough an inquiry as I have been able to make into the subject I believe that among the causes conducing to desertion are, first, excessive guard and police duties both on shore and at sea; second, the unavoidable enlistment of men who come into the service as a refuge and with the intention of remaining only so long as serves their purpose; third, the indisposition on the part of many to regard desertion as a disgraceful and felonious crime; fourth, the lack of sufficiently severe and rigorous punishment, as a rule, of the crime of desertion, to render the same odious and to effectually act as a deterrent.

I am of the opinion that the amount of guard duty under ordinary circumstances should be limited at all stations by general order, as is the case in the United States Army.

DESCRIPTIVE LIST AND CONDUCT RECORD.

Much difficulty has been experienced at the different posts in the matter of marking men in conduct for discharge, and it is recommended that some system of marking be established which will distinguish between the moral and professional qualifications of the soldier and that will make the average of the two his general character.

It is further suggested, in this connection, that a man in his first enlistment should not be given markings in professional qualification until he has served one year of his enlistment.

PUNISHMENTS.

It is noticed from the reports of punishments that the same offenses are regarded differently by different commanding officers, the punishments at different posts being greatly at variance, and it is suggested that some definite and general system, similar to that in vogue in the United States Army, be established, so that punishments for like offenses will be more nearly equal throughout the Corps.

GOOD-CONDUCT MEDALS.

Since the order providing for the bestowal of medals for good conduct was issued 142 of these medals have been issued to enlisted men of the Corps. As far as the records to date show, not a single enlisted man of any rank who was awarded one of these medals has been tried by court-martial, which, to say the least, is a very satisfactory showing, and proves that recognition of meritorious service by the Government is valued and appreciated by the enlisted men.

Considerable difficulty has been experienced by the board to whom applications or recommendations for good-conduct medals are referred on account of the inconsistency found to exist in many cases between the average standing as given in the markings on conduct records of the men and the character indorsed on discharges, thus showing the necessity for some more consistent system of marking.

SPECIAL-DUTY MEN.

The custom, so general at the different posts, of selecting and detailing enlisted men as office clerks and promoting them to the rank of corporal and sergeant in order to give them increased pay is one deserving consideration. The work performed by these detailed men is not only absolutely necessary, but is of a character requiring more than the ordinary degree of intelligence and education on the part of those so detailed, and should be rewarded by increased compensation over and above what the average private soldier receives; but the small number of noncommissioned officers at present allowed by law to the Corps is insufficient to admit of these details without increasing considerably the duties of a class already hard worked. The object of rank is to endow one with military authority, and as the performance of clerical work does not necessitate the exercise of such authority, it is believed that if some measure of law could be secured whereby enlisted men detailed to perform clerical work could be allowed an appropriate per diem compensation, in addition to their pay as privates, it would accomplish the desired object, and at the same time aid in lightening the burden of the noncommissioned officer performing military duties on shore and at sea, by adding to the number available therefor.

REGULATIONS AND ORDERS.

The Marine Corps is governed, in its details, by both Army and Navy regulations, and by general and special orders and circulars emanating from these two sources, so that it is necessary for one to be excellently well versed in the orders and regulations of both branches of the service in order to intelligently conduct his official business. If the various regulations and orders relating to the Marine Corps were compiled in one volume for the special use of the Corps, it would, in my opinion, be of incalculable benefit, and would obviate many of the minor difficulties and mistakes which so often occur, and I would respectfully recommend that a board, or some single officer, be appointed to collect and compile the various orders and regulations referred to.

SAVINGS FROM RATIONS AND COMPANY FUNDS.

The decrease in the contract price of rations at some of the posts of the corps, and the practice of purchasing articles of tableware and kitchen utensils from the company fund, renders it almost impossible at some stations to make any perceptible improvement in the men's table fare, owing to the limited amount available after the purchase of the articles above mentioned. In my opinion no article of the character referred to, which can legitimately be purchased by the quartermaster's department, should be obtained from the company fund. There has been little or

no complaint from the enlisted men at the various stations as to the quality or quantity of the food. I have found occasional instances where complaint was made on account of poor cooking, which must necessarily occur, more or less, where there are no regularly trained cooks. I have known instances where the men of the command contributed, without the knowledge of their officers, from their own private funds to the compensation of a competent cook, thus evidencing the importance of this subject to the enlisted men. I believe it would be greatly to the benefit of the enlisted men and to the interest of the service if certain men could be selected who show an aptitude for service as cooks, and regularly trained at some post under the instruction of a competent head. In case of a vacancy existing at any post for a cook one could be selected and detailed therefor from those above mentioned. This subject is one which, I believe, should receive special consideration.

POST EXCHANGES.

Post exchanges are now in operation at the following-named posts: League Island, Pa.; Norfolk, Va.; Boston, Mass.; Port Royal, S. C.; Annapolis, Md.; and Puget Sound, Bremerton, Wash. On account of the major portion of the troops having been withdrawn from the Eastern posts during the war, no definite conclusion as to the result of this experiment in the Marine Corps can be arrived at at the present time.

COMPANY ORGANIZATION.

It is thought that advantage to the service would result if some more permanent character of company organization could be established, especially at the large posts, the nucleus of such companies to be composed of men who have completed their required term at sea, or men who, for any other reason, are not available for sea service. I am of the opinion that it would result in furthering the military education and discipline of recruits, enabling responsibility to be placed, and stimulate individual effort on the part of both officers and enlisted men, and facilitate battalion organization for field service when necessary.

THEORETICAL INSTRUCTION.

Commissioned officers.—Though required by the regulations, there has been practically no systematic theoretical instruction of officers at the different stations.

The scarcity of officers for duty at the different posts, they being as a rule "day on and day off" guard in addition to their numerous other duties in connection with drills, courts-martial, boards of survey, etc., has rendered it difficult to devote much time to theoretical instruction, though this subject is one of importance, not only to the general interests of the service, but the individual officer as well, and particularly to those required to pass examination for promotion.

It is in many instances not practicable that officers can be given the advantages of a course at the school of application within three years of the time of their promotion, when a certificate of graduation would stand in lieu of a professional examination; as to these officers, a systematic course of theoretical instruction by easy stages, at the post where they may serve, would be of great advantage, and it is hoped that the time is not far distant when Congress will give to the Corps its proper and necessary complement of officers and thus make the establishing of such a system of instruction practicable, at the several larger posts at least.

Noncommissioned officers.—The above, in a great measure, applies to the theoretical instruction of noncommissioned officers. It has been difficult, owing to the limited number of noncommissioned officers in the Corps, to spare a sufficient quota from the different posts to form a class at the school of application, and it will be impossible to thoroughly pursue this subject at the different posts until the number of both officers and noncommissioned officers is increased to such an extent that there will be sufficient days between their tours of guard duty for the proper study of the different subjects. The Marine Corps personnel bill, now pending before Congress, provides that 25 per cent of the officers hereafter appointed may be selected from worthy noncommissioned officers of the Corps, and this lends an additional importance to the subject of the theoretical instruction of the noncommissioned officers in the Marine Corps. Not less important, however, is the matter of their practical instruction, and especially with regard to target practice and naval gunnery.

HEALTH OF TROOPS.

The health of the troops of the various commands, both on the Atlantic and Pacific coasts during the past year has been very good.

APPOINTMENTS, RETIREMENTS, ENLISTMENTS, DISCHARGES, ETC.

Appointments.

From the Naval Academy, as second lieutenant	1
From civil life, as acting second lieutenants, during the war	40
From the Marine Corps, noncommissioned officers, as acting second lieutenants during the war	3
Total	44

Retirements.

One lieutenant-colonel (John H. Higbee), June 1, 1898; 1 major (Henry A. Bartlett), February 1, 1898; 1 first sergeant, 5 sergeants, 1 musician, and 4 privates.

Died.

One lieutenant-colonel (John L. Broome, retired, at Binghampton, N. Y.), April 12, 1898; 1 second lieutenant (Charles S. Gray); 2 sergeants, 1 musician, and 49 privates, 2 of whom were on retired list. Lost in wreck of U. S. S. *Maine*—2 sergeants, 3 corporals, 2 musicians, and 21 privates. Killed in action against Spaniards—1 acting sergeant-major, 1 sergeant, 1 corporal, and 4 privates.
Number of calls from Pension Office and replied to from October 1, 1897, to October 1, 1898, 274.

Enlistments.

For five years	1, 173
For the war	472
Reenlistments:	
From the Marine Corps	125
From the Army	45
Total	1, 817

Discharged.

Upon expiration of enlistment	511
Upon settlement of accounts	15
Upon report of medical survey	76
Unfit for the service	77
By purchase	26
By sentence of court-martial	44
Total	749

Deserted.

From October 1, 1897, to September 30, 1898, 343, many of whom were men who enlisted for the war.

Though the First Marine Battalion was mobilized and placed in the field with extraordinary facility at the beginning of the war with Spain, the requirements of the occasion have demonstrated the advisability of having on hand at all times the necessary military stores, camp equipage, mess gear for field service, etc., for a very large portion of the entire Marine Corps serving on shore, instead of having to go into the market and purchase such stores at short notice, or relying upon the accommodation of the Quartermaster's Department of the Army, which in the recent emergency was most obligingly available to us.

In conclusion, I beg to state that the considerably increased enlisted strength of the Corps within the past three years; the inauguration of the present system of target practice under the supervision of this office; the increase in the number of pension cases referred here from the Commissioner of Pensions for information; the additional correspondence occasioned by the increased number of enlistments; the establishing of the present system of semiannual inspection of all posts, recruiting offices, and guards of receiving ships, together with the increase in the number of military posts of the Corps, have greatly multiplied the duties of the adjutant and inspector, and have more than doubled the clerical work of this office, necessitating the services of at least two additional enlisted men as clerks, one for special work

in connection with target-practice records, as assistant to the inspector of target practice, and the other in connection with the reports of inspections of posts, guards of ships, recruiting offices, etc. I would, therefore, in view of these facts, respectfully suggest to the Colonel Commandant the advisability of providing by law for an assistant adjutant and inspector, who, in addition to his duties as assistant, shall also be superintendent of target practice, and take the place of the adjutant and inspector as regular member of the Naval Board of Inspection and Survey.

Very respectfully,

GEORGE C. REID,

Major, United States Marine Corps, Adjutant and Inspector.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,

Headquarters, Washington, D. C.

ANNUAL REPORT OF THE QUARTERMASTER, UNITED STATES MARINE CORPS.

HEADQUARTERS UNITED STATES MARINE CORPS,

QUARTERMASTER'S OFFICE,

Washington, D. C., September 28, 1898.

SIR: I have the honor to submit herewith a report of the operations of this department during the fiscal year ending June 30, 1898. The report refers to not only usual or routine matters, but to more extraordinary affairs which have occurred during the war between the United States and Spain. Reference is also made to new construction work, repairs and improvements at the various posts, to various changes which have been prescribed in standard articles of uniform, to adoption of new articles of uniform, to increases in the list of camp and garrison supplies issued on requisition, etc. Certain recommendations are submitted which are thought to be timely and to the interests of the Corps. Appended are extracts from the report of Capt. T. C. Prince, assistant quartermaster, on duty at the supply depot, Philadelphia, Pa. Also appended is the report of Capt. C. L. McCawley, assistant quartermaster, who served as quartermaster First Battalion of Marines, which command recently returned from Cuba.

Following is a statement of the regular annual appropriations coming under the cognizance of this department which were available on July 1, 1897:

Provisions	\$100,000
Clothing	97,255
Fuel	19,500
Military stores	13,297
Transportation and recruiting	15,000
Repair of barracks	45,600
Forage	3,000
Hire of quarters	6,996
Contingent	33,700

At the commencement of the current fiscal year the unexpended balances of these appropriations were as follows: Provisions, \$13,716.99; clothing, \$631.82; fuel, \$7,293.92; military stores, \$1,370.10; transportation and recruiting, \$1,069.90; repair of barracks, \$26,285.20; forage, \$1,602.51; hire of quarters, \$1,712.14; contingent, \$4,162.97. Various expenditures under these several heads have been formally authorized, and when the obligations thus created have been met only trifling balances will remain, the expenses of the past year under the regular appropriations having been virtually the same as the amount of the appropriations.

In addition to the regular appropriations above set forth, Congress, in an act approved May 4, 1898, provided \$567,900 for pay, provisions, clothing, etc., for 1,640 additional men, the enlistment of whom was authorized by such act. Of this sum \$270,420 were allotted to this department for the procurement of provisions, clothing, military stores, equipage, etc. Of this allotment there remains an unexpended balance of \$32,729.61, against which there are sundry outstanding authorized expenditures, the payment of which will materially reduce this balance.

Also, under an act making appropriations to supply deficiencies, etc., approved July 7, 1898, there were available \$111,400 for the purchase of clothing, military stores, transportation and recruiting, and contingent expenses. Out of this amount there has actually been expended \$57,460, and outstanding liabilities against this appropriation will practically exhaust it.

In addition to the foregoing sums of money appropriated by Congress, there were allotted to this department out of the appropriation of \$50,000,000 for the national

defense \$64,529.64 on March 16, 1898; \$22,000 on April 7, 1898; and \$20,000 on April 20, 1898. These allotments were expended on clothing, military stores, and contingent expenses for the purpose of putting on a thoroughly efficient footing the marines who served in Cuba during the war, as well as those held in readiness for such duty.

From all sources there were available under regular and special appropriations \$1,209,997.54.

War between this country and Spain occurring during the past fiscal year necessarily made that year an exceedingly busy one for this department, especially the last five months thereof. Not since the days of the civil war have the conditions been so extraordinary, the requirements so many and urgent. When war was declared this department was not prepared for all emergencies of field and ship, as the regular annual appropriations of Congress are only sufficient to procure the usual supplies required in time of peace. Shortly before the declaration of war the Secretary of the Navy allotted to the Marine Corps a portion of the national-defense fund which Congress appropriated, and subsequently to the date of the declaration of war Congress appropriated for the Corps additional sums of money for extraordinary purposes.

Under your direction, immediately after the allotment of the national defense fund was placed to the credit of this department, I took prompt steps to meet the requirements and procured all additional war supplies required. Necessary arms, ammunition, equipments, rations, clothing, camp and garrison equipage, etc., were contracted for or purchased in the open market, the governing idea in their procurement being promptly and thoroughly to put the Corps on an efficient footing for active service afloat and ashore. In sufficient quantities for that purpose, and of the best obtainable quality, these supplies were purchased and issued to the troops, and stored for future demand. The allotments out of the national defense fund became available as follows: \$64,529.64, March 16; \$22,000, April 7; \$20,000, April 20. Under date of April 12, 1898, you notified this office that two battalions of marines, each 1,000 strong, would immediately proceed to Cuba for field service, and directed that the greatest dispatch consistently with thoroughness be shown in fitting out the battalion for such duty. One battalion of 646 marines assembled at New York on April 20, 1898, and was ready to sail for Cuba on April 22, 1898. All necessary military stores and supplies were in the hands of the quartermaster of the battalion when the command was ready to embark, or thirty-six days after the first emergency allotment became available and one day after the last allotment was placed to the credit of this department. The quartermaster of the battalion has reported that the stores and supplies received by him from this office and the office of the assistant quartermaster at Philadelphia were sufficient and satisfactory for the actual needs of the battalion. Subsequently he purchased certain supplies in New York which he deemed essential to the convenience of the battalion. As you were at the Brooklyn Navy-Yard supervising the preparation of the battalion for services in Cuba, you are aware whether or not the command was fitted out efficiently and with dispatch. I make no comment in this connection except to refer to remarks which will be found in the appended report of Capt. C. L. McCawley, quartermaster of the battalion, and to state that the commanding officer of the battalion when asked by me by telegraph, shortly before the battalion sailed, if he had any request or suggestions to make, replied, "None." It was a source of great satisfaction to hear, as I did, officers on duty with the troops at camps Long and Heywood express their satisfaction at the care and thoroughness shown in equipping the battalion for the field. These officers spoke in terms of high praise of the manner in which the quartermaster of the battalion discharged his various and arduous duties.

The report of Capt. C. L. McCawley shows that while the battalion was in Cuba its needs were promptly and satisfactorily met with respect to arms, ammunition, rations, clothing, and camp and garrison equipage. The fact that not a single man was lost, except on account of wounds received in battle, and that the command, both officers and men, returned in excellent health, is conclusive proof that marked zeal and good judgment were shown by the officer in command, the company officers, and those of the staff in the discharge of their several and important duties. The report of Captain McCawley concerning the arms, clothing, transportation, rations, boiled water, etc., used by the battalion is of interest.

It is worthy of remark here that the marines in Cuba were provided with light-weight woolen underwear, and that to this fact, in part at least, may be attributed the good health of the command during the rainy season of the year in a tropical climate. It may also be said that the comfort of the men was greatly enhanced by the issue of linen campaign suits, which were procured with your authority. The chief purpose of these suits was to afford the men comfort, and the garments, being light in weight and of strong texture, fully met that purpose. For the first time in the history of the Corps campaign hats were adopted as uniform and were issued to the battalion. The command was provided with a complete outfit of tools, imple-

ments, and all equipage required for the field. Even wire cutters, to be used against Spanish field entanglements, were supplied, to guard against emergencies.

Since assuming the duties of quartermaster I have visited all the posts of the Corps, with the exception of the one at Sitka, Alaska, and the new station at Pensacola, Fla., and inspected the buildings and grounds with a view to ascertaining the conditions and requirements thereat, paying particular attention to the questions of heating, lighting, and plumbing, the arrangement of quarters, the messing facilities of the men, and the exterior appearance and interior conveniences and comforts of barracks and quarters. Improvements have been made in various officers' quarters, repairs more or less important have been made at four posts, three new buildings have been erected or are in process of construction, and minor repairs have been made at the stations.

At Port Royal, S. C., one set of officers' quarters, costing \$2,500, has been constructed under contract. These quarters were completed and ready for occupancy in June, 1898. They have since been furnished. This building is of frame, two stories high, and contains eight rooms and bath. It has modern plumbing, including porcelain-lined tub, and while small is in all respects a comfortable, neat-appearing building. It was constructed under the supervision of Civil Engineer George Mackay, U. S. N., whose zeal and good judgment have been much appreciated by the undersigned.

In the act approved March 3, 1897, Congress provided \$18,000 for the erection of one barracks, one set of officers' quarters, and grading, etc., the parade ground at the naval station, Bremerton, Wash. On September 10, 1897, the Secretary of the Navy allotted to the Marine Corps a very desirable site there. Owing to a misunderstanding on the part of bidders considerable, but unavoidable, delay occurred in making contracts to erect the barracks and quarters, and not until January 20, 1898, were contracts formally entered into. By authority of the Secretary of the Navy, Civil Engineer F. O. Maxson, U. S. N., was assigned as superintendent of the construction work, and that officer's interest and skill have been of much value to this office. The work has progressed satisfactorily, and is rapidly nearing completion. It is expected that the barracks and quarters will be ready for occupancy early this fall. The barracks is of frame. It is 132 feet 9 inches long, 24 feet deep, and 41 feet high from ground to tip of roof. The central portion is two stories high; the side wings and a rear extension are one story high. It will be lighted by electricity and contain modern appliances for heating and ventilating. A porch extends along the entire front of the barracks. The building will comfortably accommodate 130 men. The officers' quarters are also of frame, the design being colonial in type. It is two stories high, with an attic, and contains eight fairly large rooms and reception hall. It will be lighted by electricity and have furnace heat. The plumbing is of the best. Altogether it will be one of the most comfortable and attractive of quarters provided for officers of the Corps. All the stamping, grading, and grubbing for the parade ground has been completed. Sewer pipes have been laid and flagstaff, fences, and pavements will be shortly completed.

Following are the stations at which repairs have been made under special authority of Congress:

Boston, Mass.—An additional story, which affords needed increased accommodations for the men, has been added to the barracks, at a cost of \$3,100. The work was well and promptly done under contract. An incandescent lighting system has been installed at this post, in both barracks and quarters, at a cost of \$700.

New York.—Extensive repairs on the barracks and officers' quarters have been completed, which involved an expenditure of about \$10,000. The particular repairs made were an addition to the men's bath house and the placing in of seven modern porcelain-lined bath tubs, painting outside and inside of barracks and officers' quarters, laying a granolithic pavement under the arcade of the barracks, improving the walks across the parade ground, strengthening and painting the iron fence around the front of the garrison, putting in modern plumbing in the barracks hospital, placing porcelain-lined bath tubs and stationary washstands in all officers' bathrooms, repapering rooms and halls in the same quarters, attaching fire escapes to the end of barracks where the cells are, and putting in ventilators and laying a new floor in the basement of officers' quarters. Sundry and minor repairs to the barracks and quarters were also made.

Under the general appropriation "Repair of barracks," granolithic pavements have been laid under the arcade, approaches thereto, and walks through and around the parade ground at the marine barracks, Washington, D. C.

At this post and at that of the navy-yard here it is proposed to install electric lights and steam or hot-water heating.

At all other posts of the Corps various necessary repairs have been authorized and completed.

Generally speaking, the condition of buildings and grounds at all the posts is good, and the commanding officers of stations display commendable pride in this direction.

The construction of one set of officers' quarters at Sitka, Alaska, authorized by Congress in the act approved June 10, 1896, has not been commenced, owing to the fact that squatters on the site contested the right of the Government to take possession thereof, and when that question was decided unfavorably to the squatters their failure to remove the building on the site further delayed the building programme. It is hoped that this office will soon be in a position to begin this work, as officers' quarters at that post are very much needed. A contract has been entered into for this work.

The earthquake of last spring did considerable damage to the barracks and officers' quarters at Mare Island, California. In the naval appropriation act, approved May 4, 1898, \$5,425 was provided with which to put these buildings in good condition. The work of repairs and improvements has been commenced and will be pushed to an early completion, except repairs to one wing of the barracks which is now occupied as a naval hospital. This wing will be repaired when suitable quarters for the sick are provided elsewhere.

In December last a post was established at Pensacola, Fla. The commandant of that station, Commander Reisinger, by authority of the Navy Department, assigned for use as a barracks a substantial, commodious building formerly in use by the construction corps of the Navy. For the use of the officer commanding marines a house inside the yard was assigned. The house has been furnished. Certain alterations and improvements to the barracks and quarters were made under authority of this office, and both buildings have been reported to be well suited to the purposes to which they have been put.

In the latter part of June, 1898, a post was established at Key West, Fla., in connection with the naval base at that station. No public buildings being available as a barracks, it became necessary to provide temporary quarters for a guard of 55 men and 3 officers. A private building was rented for the purpose, and all other arrangements essential to the health and comfort of the command were perfected. The post has since been abandoned.

Toward the close of the fiscal year the marine barracks and officers' quarters at Annapolis, Md., were torn down to make room for extensive improvements at the Naval Academy, which Congress authorized in the current naval appropriation bill. All the public property belonging to this department which was deemed of sufficient value to preserve was stored for safe-keeping in the available building designated by the Superintendent of the Naval Academy. The remainder was sold at public auction. The recommendation that an appropriation be provided for the erection of a new barracks and quarters at the Naval Academy has been submitted with the annual estimates for the next fiscal year. These buildings are urgently required.

With your authority a number of changes of more or less importance were made in the articles of clothing issued to enlisted men. The cotton-flannel drawers and the stiff, flat-knitted undershirt were abolished. As substitutes, drawers and shirts of the elastic-ribbed type were adopted. In addition to the usual heavy-weight garments, light-weight drawers and undershirts suitable for wear in warm weather are now issued by the assistant quartermaster at Philadelphia. Exceedingly favorable reports have been received from officers of the Corps in relation to this type of underwear, the light-weight garments being regarded as particularly essential to the comfort of the men in the Tropics. The new underwear is undoubtedly a decided improvement over the cotton-flannel drawers and old pattern undershirt.

The procurement of campaign suits and campaign hats has been alluded to, and is referred to in the report of Captain McCawley.

New arctic shoes have been adopted and will be delivered during the present fiscal year under contract. They are much better as to quality, durability, and appearance than those heretofore issued. The new pattern is known as the dull-finish coasting-sole snow-excluders. They are made of pure Para rubber and are finished outside with first-quality cashmerette and inside with black fleece wool.

Perhaps the most important modification made in clothing were changes directed in the leather shoes. For years this department has endeavored to obtain for issue shoes which would meet practical requirements, be comfortable and durable, and present a neat rather than a clumsy appearance. In the shoes now being issued it is believed that footwear has been provided which will prove entirely satisfactory in all these respects. The shoes adopted as standards are similar to those in use in the Army, which numerous official reports to the Quartermaster-General state are fully up to all expectations. The shoes are made of calfskin and have hand-sewed bottoms.

The new rubber boots are of better quality than those heretofore procured. They are made of dull-finish pure Para rubber and have tap soles. The heel of the boot is cemented and nailed on, each heel having three nails; the average weight per pair is 4 pounds.

The rubber coats now issued are of dull finish, and are made with flies 38½ inches in length and 4 inches in width at the top and 3 inches in width at the lowest buckle. The flies have four automatic buckles, riveted on tabs. Half of each buckle is on

the outside piece of each fly and the other half set back on left-hand side of the front, a distance of $3\frac{1}{4}$ inches from the edge, thus making the coat as water-tight in front as at any other point.

Hereafter the scarlet flannel lining of overcoats will extend to the bottom of the coats.

Two additional sizes of tunics and undress coats, sizes $2\frac{1}{4}$ and $3\frac{1}{4}$, are now made with the expectation of obtaining a better fitting garment. Another modification is to have what may be called long and short measurements for tunics, undress coats, and trousers. These changes mean that fourteen sizes of tunics, flannel jackets, and trousers, instead of seven sizes of the two first-named garments, and five sizes of the last-named garment, will be issued in the future; this without any increase in the expenditures.

No official complaints from any source were received by this office during the past fiscal year as to the character and quality of clothing issued to the enlisted men. If officers have fault to find with any of the garments issued, they have neglected to advise this office of the fact. The utmost care is observed by Capt. T. C. Prince, assistant quartermaster in charge of the supply depot at Philadelphia, in inspecting material received for manufacture into clothing, and each completed garment upon being delivered to his office is thoroughly inspected as to finish by the head cutter, John McAllister, whom Captain Prince reports as being particularly zealous and efficient in the performance of his duties.

So far as this office is advised, ration contractors are faithfully fulfilling the terms of their contracts, the supplies being of good quality and delivered promptly. The system of stopping a certain number of rations allowed a command is in general use throughout the Corps, and satisfactorily meets the requirements.

The increase in the strength of the enlisted force of the Corps makes necessary an addition to the building in which is located the office of the assistant quartermaster at Philadelphia, in order that the required larger quantity of material for clothing, manufactured garments, and camp and garrison equipage may be accommodated. The owner of the building will put on the present building an addition four stories high, which will afford the greater storage space needed, at an increased annual rental of \$1,300, which is a fair charge. The building is also to have an electric elevator. I have inserted this amount in the estimates for the next fiscal year.

A new standard bedstead has been adopted for the use of the enlisted men. It is of iron, and is far superior to the old-style bedstead upon which was placed woven-wire bottoms with wooden framework. The material and workmanship of the new bedsteads are of the best. The bottom is of woven wire made from No. 21 nicked steel. The weave is close, and extra strengthening cables run through it. The bottom forms a part of the bedstead, its side bars fitting into the head and foot pieces. The iron is covered with lacquered bronze.

In addition to the articles of camp and garrison equipage heretofore issued, the following can now be obtained upon requisition on the assistant quartermaster at Philadelphia: Flag halyards, G. & S.; flag halyards, recruiting; extra blades for meat saws, butchers' steels, flour sifters, dustpans, cocoa mats, coals cuttles, mops, mop handles, funnels, handirons, leg irons, roasting pans (18), roasting pans (24).

A telegraph instrument was introduced into this office about the time that war was declared with Spain, and has proven most convenient and useful in the transaction of official business, connected with the procurement, shipment, etc., of stores and supplies. The chief clerk of the office, Mr. W. W. Trail, besides being a stenographer and typewriter, is an experienced telegraph operator, and the Government was therefore put to no expense on account of salary in sending and receiving messages. Mr. Trail has shown notable skill and zeal as an operator. Prior to the sailing of the battalion for Cuba and shortly thereafter, when the work of the office was exceedingly heavy, he was at his desk all day and late each night discharging his regular duties and those of telegraph operator.

I beg permission to say here that the force of this office, both clerks and enlisted men detailed as clerks, has shown special ability and zeal in the performance of its duties. During the unusually busy days and nights referred to, the force worked with willingness, promptness, and accuracy, which won my praise, and rendered me valuable assistance.

There has also been installed at these headquarters a telephone, which has been found very convenient and useful in sending and receiving official messages.

Electric lights have also been introduced at these headquarters, being necessary to enable the officers and clerks here to attend to business at night.

It is a duty—it is a pleasure—to inform you that praise is due Capt. T. C. Prince, assistant quartermaster at Philadelphia, and the clerks and enlisted men serving as clerks in his office, for the manner in which he and they have performed their respective duties. When orders to equip the first battalion for field service were received by this office, they were communicated by wire to Captain Prince. Owing to the fact that the usual appropriations are limited, many stores and supplies

needed by the battalion were not on hand at Philadelphia for issue. Under instructions from this office to procure such necessities with the greatest dispatch and forward them to the transport which was to convey the battalion to Cuba, Captain Prince displayed zeal and good judgment, which merited my hearty approbation. Previously to this period, as well as subsequently thereto, that officer has shown energy and ability of a high order. His office has met the requirements of the Corps ashore and afloat in an entirely satisfactory manner, in filling requisitions for clothing and camp and garrison equipage.

I have also to invite your attention to the intelligence, zeal, and fidelity shown by Capt. C. L. McCawley, assistant quartermaster, in the performance of his regular duties at these headquarters, but particularly in discharging the duties of quartermaster of the first battalion previously to its sailing for Cuba, during its encampment at Key West, in the field in Cuba, while on board ship, and while at Camp Heywood. The conduct of Captain McCawley in the execution of his varied and important duties has been highly commendable. The fact that he has been recommended by the commanding officer of the first battalion for the brevet of a major for gallant conduct and meritorious services at Guantanamo, Cuba, is proof of his soldierly qualities.

Attached hereto are schedule of proposals received for supplying the Corps with rations for the year ending June 30, 1899, schedule of proposals received for supplying wood and coal, and statements of accepted proposals for supplying forage, ice, stationery supplies, and laundry service.

The following is an abstract of clerical work performed during the year: Letters and indorsements written, 5,772; letters received, 4,523; checks written, 4,818; check letters written, 875; clothing accounts on the books of the office at the close of the fiscal year, 4,000; clothing accounts settled, 520; transportation orders written, 379; open purchase requisitions received and acted on, 677; 3,505 vouchers were received, examined, and settled, involving an expenditure of \$402,975.54. The purchase of the annual supplies, fuel, forage, laundry services, rations, etc., involved the preparation of 95 contracts. In addition to the foregoing, numerous reports of boards of survey, monthly and quarterly returns of arms, accouterments, ordnance stores, clothing, and public property are received from all posts of the Corps and vessels of the Navy carrying marine guards. These reports are all examined and audited, which in itself involves a large amount of work.

To comply with the instructions of the Treasury Department in preparing quarterly returns for the Auditor for the Navy Department, it is necessary that every voucher received in this office and paid should have attached to it proper authority for the expenditure and all papers that pertain to the accounts. They are entered consecutively in an abstract of payments, giving the name of the party in whose favor the voucher is made, the amount, and the nature of the purchase.

I have to invite your attention to the fact that an additional assistant quartermaster is urgently needed, and to request that a recommendation be made to the Secretary of the Navy looking to the authorization by Congress of the appointment of such an officer. The presence of an assistant quartermaster at San Francisco has become a public necessity, for the reason that the Pacific station has grown in importance, as shipments of stores and supplies to and from the Chinese station are made through San Francisco, as upon the Hawaiian Islands a naval station and Marine Corps post of more or less importance will in all likelihood soon be established, and as the probabilities point to a naval base in the Philippine Islands. At present the duties of an assistant quartermaster at San Francisco are performed by the commanding officer of the marine barracks, Mare Island, California. This imposes on that officer much extra work of a special or technical character, the discharge of which must interfere with the performance of his legitimate duties. In my judgment, it is impracticable to detail either the assistant quartermaster now serving at Philadelphia or the assistant quartermaster at these headquarters to duty at San Francisco. The supply depot at Philadelphia is a necessity and must be in charge of an officer of this department. Equally important is the presence here of an assistant quartermaster to procure and distribute military stores and supplies, stationery, books and blanks, and to purchase necessities for the offices, headquarters, and the quarters of the Colonel Commandant, the marine barracks at headquarters, and the marine barracks at the navy-yard here. The assistant quartermaster at headquarters performs the duties of the quartermaster in the absence from headquarters of the latter officer. The assistant quartermaster stationed at Philadelphia, in addition to his regular duties, is the purchasing officer for the marine barracks, League Island, Pennsylvania. This system was recently established by your direction. Under its working economy in the public expenditures has resulted. It is my opinion that the same result would follow in case an additional assistant quartermaster was appointed and stationed at San Francisco.

I deem it my duty to call your attention to the report of the inspector of buildings of the District of Columbia concerning the condition of the building occupied by

the offices at these headquarters. In his report on the subject, dated October 22, 1897, the inspector of buildings states, after referring in detail to the defects of the building: "In conclusion, it can not be expressed in too strong language the dangerous condition of this building; first, from faulty construction; second, from overloading of floors or roof; third, from fire; fourth, and most important, from collapse."

"As to collapse," the report concludes, "in case of storm or sudden vibration, the building is likely to immediately collapse, and is therefore dangerous to life and limb." Since this report was made the chimney flues have been lined with galvanized iron tubes and the floor beams and other particularly weak or dangerous parts of the building have been repaired more or less to guard against collapse. No repairs and improvements will make the building safe, however, and the suggestion is submitted that at an early date a recommendation be made that Congress appropriate \$30,000 for the erection here of a suitable fireproof structure. The present building is of frame, and affords little or no protection in case of fire against loss or damage to the valuable public records stored therein.

It is further suggested that in the near future substantial barracks should be erected at the navy-yard, League Island, Pa., and that three sets of officers' quarters be constructed at the navy-yard, Norfolk, Va. If the Corps is maintained at its present strength it will be necessary to add an additional story to the marine barracks, Portsmouth, N. H., as the accommodations now provided at that station are not more than sufficient for the small command usually stationed there.

Very respectfully,

F. L. DENNY,
Major and Quartermaster.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,
Headquarters, Washington, D. C.

UNITED STATES MARINE CORPS,
DEPOT OF SUPPLIES, ASSISTANT QUARTERMASTER'S OFFICE,
1100 South Broad street, Philadelphia, September 1, 1898.

SIR: On July 1, 1897, at which time the present incumbent assumed charge of this office, there was a very limited quantity of material and finished clothing on hand. Since that date the work of manufacture has gone steadily on, and at the end of that fiscal year a good supply of both clothing and material was on hand.

I inclose tables showing the amount of clothing and material on hand at the beginning of the year, the amount manufactured, the amount issued to the service, and the amount on hand at the end of the year. Tables marked A, B, C, and D.

During the year all requisitions were filled as fully and as rapidly as the amount of clothing and equipage on hand would permit, and the shipments consisted of 992 boxes, 136 bales, 109 barrels, 1,086 bundles or packages, the aggregate weight of which amounted to 258,012 pounds. The number and weight of articles received are not kept, but it is obvious that the weights are in excess of that sent out, as there is a certain amount of loss by scraps in cutting. Thus it will be seen that at least 500,000 pounds of material and stores were handled by the working force, leaving out the necessary handling of the goods in the office, which would amount to as much more. The fact that this work was done is sufficient proof of the efficiency of the working force of the office, the actual handling being done by four men. It was not possible to do this work in the regular hours, but it was found necessary to keep the men overtime and to have them, in some instances, to work all night and on Sundays. No record of this extra work was preserved, the men being kept at the work until it was finished. The work was done willingly and well.

I wish to call attention to the efficient work of the cutters, under charge of Mr. John McAllister, and, as an instance of quick, good work, will cite the issue of the campaign suits. The first delivery of the material was on May 18, 1898. The first issue of the finished suits was made to Captain McCawley on May 27, 1898, the 2,000 garments having been cut by the three cutters then employed, sent to the operatives, and received back and packed for shipment in less than the ten days. The work of the cutters and the head cutter both before and since has been of an equally high order. In this connection I would like to call attention to one feature of the work which might be overlooked; that is, the cutting of garments to special measure. Each of these must be cut separately, while the regular sizes are cut in layers of from four in the case of overcoats, trousers, and tunics to ten in the case of linen. Thus the work of cutting special sizes represents an extra amount of work. This work is all done by the chief cutter, and during the last fiscal year 389 special garments were cut for the Corps and 70 for the naval bands. With the beginning of the war with Spain the work of that department was greatly increased, and it was necessary to employ extra

cutters, and before the end of the year six were employed in addition to the chief cutter. There were employed by this office about one hundred operatives before the war, and since that time the number has been increased to about four hundred, preference being given to the wives, widows, and children of soldiers, sailors, and marines.

In regard to the work of the clerical force, in addition to the routine work of the office, keeping accounts and making up vouchers for the 29 contractors, etc., there were written 3,265 letters, 550 invoices were made out in triplicate, and 302 vouchers in quadruplicate. The work compelled the clerical force to work till late at night, and very frequently all day Sundays, that the work of the office might be kept up to date. There has scarcely been a day during the year when the work was finished in the regular hours. As each shipment must be accompanied by express or freight receipts, in duplicate, it brings the grand total of documents from this office to about 8,000. Since the 8th of April last the purchase of stores for the marine barracks at League Island has been made through this office, as the commanding officer of that post complained that he was unable to get replies to his proposals. If the prices heretofore paid for stores for that post can be judged from the prices as estimated by the commanding officer, this transfer has resulted in a considerable saving to the Government.

That a great increase in the work of this office has taken place may be seen by a reference to the operatives' pay rolls, which show an increased expenditure of about one-half over that of previous years.

Very respectfully,

T. C. PRINCE,

Captain and Assistant Quartermaster, United States Marine Corps.

The QUARTERMASTER UNITED STATES MARINE CORPS,
Washington, D. C.

A.—Goods for manufacturing purposes on hand July 1, 1897, received, expended in the manufacture of clothing during the year, and balance on hand June 30, 1898, at assistant quartermaster's office, United States Marine Corps, Philadelphia, Pa.

Articles.	On hand July 1, 1897.	Received during year end- ed June 30, 1898.	Total.	Expend- ed in manufac- turing of clothing during year.	Balance on hand June 30, 1898.
sky-blue kersey.....yards..	479	20, 836	21, 317	17, 466	3, 851
dark-blue coat cloth.....do....	57	3, 043	3, 100	1, 742	1, 358
scarlet cloth.....do.....	108	67	175	94	81
scarlet flannel.....do.....	517	6, 697	7, 214	3, 752	3, 462
scarlet facing cloth.....do.....	30	265	295	295	.....
dark-blue flannel for jackets.....do....	176	25, 045	25, 221	10, 342	14, 879
dark-blue flannel for shirts.....do....	892	15, 769	16, 661	11, 710	4, 951
21-ounce white linen.....do.....	1, 830	10, 137	11, 967	11, 967	.....
Canton flannel, 30 inches wide.....do....	146	17, 120	17, 266	17, 266	.....
Cotton ticking, 36 inches wide.....do....	475	.....	475	265	210
unbleached drilling.....do.....	879	9, 009	9, 888	8, 107	1, 781
Unbleached muslin, 1 yard wide.....do....	.....	1, 066	1, 066	563	503
white lining (jean).....do.....	2, 811	6, 415	9, 226	4, 670	4, 556
drab lining (jean).....do.....	150	14, 970	15, 120	15, 120	.....
padding.....do.....	310	389	699	425	274
Silesia, black, 1 yard wide.....do.....	369	3, 259	3, 628	2, 249	1, 379
Italian cloth.....do.....	.....	7, 331	7, 331	4, 446	2, 885
white cloth.....do.....	4	8	12	5	7
Light canvas, 24 inches wide.....do....	.....	12, 257	12, 257	7, 063	5, 194
Heavy canvas, 24 inches wide.....do....	166	1, 270	1, 436	1, 436	.....
Linen baling cloth.....do.....	193	.....	193	19	174
Wadding.....sheets..	8, 614	.....	8, 614	3, 843	4, 771
Tape.....rolls..	122	800	922	795	127
Mohair braid.....yards..	136	250	386	106	279
Yellow silk lace, 1/2-inch.....do....	918	5, 290	6, 208	5, 593	615
Worsted lace, 1/2-inch.....do....	199	613	812	684	128
Yellow worsted lace, 3/4-inch.....do....	.....	189	189	28	161
Leather, black.....pieces..	.....	1, 317	1, 317	1, 126	191
White-metal corps devices.....pairs..	9	40	49	49	.....
Hooks and eyes, large.....gross..	10	90	100	95	5
Hooks and eyes, small.....do.....	10	90	100	59	41
Coat buttons.....do.....	42	253	295	241	54
Jacket buttons, 28 lignes.....do....	37	783	820	768	52
Jacket buttons, 25 lignes.....do....	19	123	142	139	3
Vest buttons.....do.....	11	415	426	397	29

A.—Goods for manufacturing purposes on hand July 1, 1897, etc.—Continued.

Articles.	On hand July 1, 1897.	Received during year end- ed June 30, 1898.	Total.	Expend- ed in manufac- turing of clothing during year.	Balance on hand June 30, 1898.
Small buttons (for shirts).....gross..	8	334	342	390	43
Trousers buttons and eyelets, large size.....do....	32	520	552	484	68
Trousers buttons and eyelets, small size.....do....	79	306	474	421	53
White bone buttons (for trousers), large.....do....	227	400	627	557	70
White bone buttons (for trousers), small.....do....	92	206	298	213	145
Trousers buckles.....do.....	116	120	236	125	171
Sewing silk (50-yard).....spools.....		13, 267	13, 267	13, 496	371
Twist (10 yards each).....quilts.....	491	3, 268	4, 579	4, 579	
Basting cotton (200-yard).....spools.....	816	3, 190	3, 976	3, 810	2, 166
Thread, black.....ounces.....	113	448	560	560	
Thread, white.....do.....	307	672	1, 179	932	227
Cotton, 6-cord, No. 39.....spools.....	1, 944	49, 341	51, 285	24, 121	27, 164
Unbleached muslin for pillowcases.....yards.....		3, 020	3, 020	2, 006	1, 014
Unbleached muslin for bed sheets.....do.....		8, 827	8, 827	6, 133	2, 694
Brown linen duck, 27-inch.....do.....		71, 222	71, 222	27, 020	44, 202
Metal toggles.....gross.....	11	517	528	455	73
Navy buttons:					
Coat, 25 lignes.....do.....	15		15	2	13
Jacket, 28 lignes.....do.....	15		15	2	13
Jacket, 25 lignes.....do.....	10		10		10
Vest, 23 lignes.....do.....	9		9	3	6
Jersey, fine quality.....yards.....	30		30	3	36
Suspender buttons.....gross.....		732	732	215	517
Fly buttons.....do.....		636	636	124	502

T. C. PRINCE,

Captain and Assistant Quartermaster, United States Marine Corps.

B.—Equipage received from contractors, or manufactured by quartermaster's department, United States Marine Corps, issued and expended and on hand year ending June 30, 1898.

Articles.	Re- ceived from con- tract- ors year ending June 30, 1898.	Issued and ex- pend- ed year ending June 30, 1898.	On hand year end- ing June 30, 1898.	Articles.	Re- ceived from con- tract- ors year ending June 30, 1898.	Issued and ex- pend- ed year ending June 30, 1898.	On hand year end- ing June 30, 1898.
Axes, cast steel.....	120	138	36	Buckets, horse.....	144	97	123
Ax handles.....	192	197	53	Chairs:			
Brooms:				Barrack.....	300	335	186
Carpot, No. 2.....	1, 200	1, 208	671	Arm.....			3
Stable.....	624	56	600	Camp colors.....		8	5
Pavement scrub, No. 2..	120	95	52	Coffee mills.....	18	19	7
Whisk.....		174	403	Can openers.....	132	56	88
Broom handles.....			51	Cleavers.....	36	26	24
Bunk bottoms, woven-wire.....		225		Cups:			
Bedsteads.....	a 50	50		Coffee.....	2, 040	1, 965	440
Brushes:				Tin.....	1, 220	1, 217	3
Sieve.....		66	85	Dippers.....	144	57	87
Ex. ex. paint, §.....	36	27	16	Dusters, painter's.....	24	17	38
Ex. ex. paint, §.....	24	39	16	Dishes:			
Ex. ex. paint, §.....	36	32	24	Vegetable.....		94	285
Varnish, §.....		17	103	Pickle.....	60	44	56
Varnish, §.....		18	106	Camp kettles, galvanized iron	2	2	
Painter's wall.....	72	42	30	Flags:			
Scrubbing.....	240	527	168	Post.....		10	21
Whitewash, No. 10.....	56	57	4	Storm.....	6	32	6
Whitewash, No. 12.....	56	52	10	Flag halyards, garrison and			
Kaleomine.....	6	6		post.....	6	6	
Bowls:				Funnels.....	30	25	6
Chopping.....	24	35	5	Forks:			
Oyster.....	1, 200	1, 058	796	Carving.....	48	30	18
Sugar.....		26	171	Meat.....	60	18	42
Brush handles, 12-foot.....			42	Table.....	144	1, 129	118
Brush handles, 14-foot.....			45	Graters.....	24	24	

B.—*Equipage received from contractors, or manufactured by quartermaster's department, United States Marine Corps, etc.—Continued.*

Articles.	Re- ceived from con- tract- ors year ending June 30, 1898.	Issued and ex- pended year ending June 30, 1898.	On hand year ending June 30, 1898.	Articles,	Re- ceived from con- tract- ors year ending June 30, 1898.	Issued and ex- pended year ending June 30, 1898.	On hand year end- ing June 30, 1898.
Gravy boats	240	99	141	Pillowcases, ticking	a 15	50	.....
Guidons and markers .....	.....	8	.....	P'ots, mustard	120	108	78
Hatchets	60	25	35	Pitchers:			
Crash for towels, yards.....	30	30	.....	Water	86	102	12
Irons:				Sirup	60	22	98
Hand	42	32	10	Pickaxes.....	60	37	23
Leg	42	28	14	Pickax handles	84	53	31
Mosquito nets.....	60	60	.....	Rope, manila, coils	4	3	1
Kettles, camp	180	78	102	Scales:			
Knives:				Patent beam	12	10	2
Bread.....	48	29	20	Spring balance.....	12	10	2
Carving.....	24	28	7	Scuttles, coal.....	6	6	.....
Chopping.....	24	18	6	Sash tools, No. 6.....	64	45	19
Meat.....	48	39	14	Sash tools, No. 8.....	36	40	28
Table	192	1, 100	47	Scoops, flour.....	6	6	.....
Lanterns, complete	116	107	9	Saucers	2, 040	1, 401	1, 308
Ladles, soup, large	24	18	6	Shovels, long handle	120	71	49
Ladles, soup, small.....	24	25	.....	Shovels, short handle	120	114	40
Meat choppers.....	12	11	3	Spades	192	176	57
Mattresses	360	401	50	Stencils, sets	6	6	.....
Mattress covers.....	500	536	763	Sheets, muslin	a 2, 400	1, 252	1, 094
Mops	6	6	.....	Steels, butcher's	24	18	6
Mop handles.....	6	6	.....	Sifters, flour.....	54	19	26
Mats, cocoa	6	6	.....	Spoons:			
Nail pullers.....	6	6	.....	Basting	36	27	12
Nippers.....	48	31	17	Mustard	120	120	21
Pans:				Table .....	.....	890	188
Dish	100	46	54	Tea	600	667	199
Frying.....	64	36	29	Stools, camp .....	.....	.....	56
Roasting, 24-inch.....	36	28	8	Skimmers.....	52	30	22
Roasting, 18 inch.....	12	12	.....	Saltcellars	360	237	18
Mess.....	180	72	108	Saws, meat	12	26	16
Sauce	6	6	.....	Tents, complete:			
Dust.....	6	6	.....	Common .....	.....	.....	2
Plates:				Hospital	6	6	.....
Dinner.....	1, 537	1, 484	543	Shelter.....	600	600	.....
Meat.....	.....	58	84	Wall	150	150	.....
Soup.....	601	1, 477	.....	Tumblers	1, 019	1, 302	200
Tin	20	20	.....	Wire, steel, coils	4	3	1
Pillows	322	260	62	Mosquito head nets	40	40	.....
Pepper boxes	320	197	180	Bedsteads, complete.....	376	376	.....
Pillowcases, muslin.....	a 1, 900	1, 470	430				

a Manufactured by quartermaster's department, United States Marine Corps, year ending June 30, 1898.

T. C. PRINCE,
Captain and Assistant Quartermaster, United States Marine Corps.

C.—Clothing received from contractors, posts, and manufactured by quartermaster's department, United States Marine Corps, issued, expended, or on hand year ending June 30, 1898.

	Manufactured by quartermaster's department from July 1, 1897, to June 30, 1898.	Received from contractors.	Received from posts.	Total issues year ending June 30, 1898.	On hand June 30, 1898.
Helmets:					
White.....		1,525		1,421	325
Black.....		1,426	11	901	760
Suspenders.....		1,000		2,356	
Leggings.....		2,533	10	990	2,002
Linen coats, band leader.....	2			2	
Undress coats, band leader.....	1			1	
Caps:					
Covers (white).....		8,029	197	7,614	3,953
Covers (black).....					474
Undress.....		6,601	80	6,298	1,229
Muskrat.....		850	9	521	572
Ornaments.....		7,000	58	5,887	2,286
Coats:					
Full-dress, or tunics.....	1,068		11	656	506
Linen.....	5,731		4	5,614	758
Undress.....	6,331		13	5,846	743
Overcoats.....	1,698		1	1,547	153
Full-dress (field music).....	51		1	52	8
Gloves (woolen).....		1,500	27	913	1,584
Gloves (cotton).....		14,999	24	16,327	1,715
Trousers:					
Woolen—					
Sergeants'.....	976		2	824	172
Wetted.....	414		6	321	58
Plain.....	7,553		8	6,544	1,047
Linen.....	6,430		4	5,606	913
Campaign.....	3,864			1,650	2,214
Shirts:					
Flannel.....	7,027		8	5,578	1,756
Under.....		6,774	20	6,599	1,027
Drawers (pairs).....	7,945		30	7,975	1,437
Socks (pairs):					
Woolen.....		3,000	24	7,174	2,538
Cotton.....		10,665	24	13,065	1,386
Shoes, hand-sewed (pairs).....		10,998	37	8,613	3,027
Arctic shoes (pairs).....		933	16	961	302
Linen collars.....		15,995	48	16,244	5,180
Blankets.....		2,539	2	1,649	793
Chevrons:					
First sergeants'.....	181		2	180	3
Sergeants'.....	486		4	501	37
Corporals'.....	914		10	848	76
Service.....	1,578			1,576	420
Sergeants' stripes.....	400			308	136
Shoulder knots.....		800		615	457
Helmets, spare parts of:					
Brass spikes.....		1,067	283	810	470
Brass bases.....		667	56	843	181
Chain chin straps.....		933	239	736	526
Side buttons (eye).....		934	41	888	444
Side buttons (hook).....		934	41	888	334
Devices.....		267	263	413	634
Ventilators.....		200	6	35	478
Band:					
Undress caps.....		78		93	7
Full-dress coats.....	5			5	1
Undress coats.....	33			33	
Full-dress trousers, band leader.....	1			1	
Woolen trousers.....	4			4	
Rubber boots.....		500		259	241
Rubber coats.....		738		538	200
Rubber hats.....		873		434	454
Rubber blankets.....		1,250	5	1,255	
White chevrons:					
Sergeant-majors'.....		4		4	2
Drum majors'.....		4		4	
First sergeants'.....		67	3	143	10
Sergeants'.....		200	2	230	101
Corporals'.....		834	7	439	89
Overcoat, band leader.....	1			1	

C.—Clothing received from contractors, posts, and manufactured by quartermaster's department, United States Marine Corps, etc.—Continued.

	Manufactured by quartermaster's department from July 1, 1897, to June 30, 1898.	Received from contractors.	Received from posts.	Total issues year ending June 30, 1898.	On hand June 30, 1898.
Full-dress coat, band leader.....	1	.....	.....	1	.....
Full-dress coat, second leader.....	1	.....	.....	1	.....
Sergeant-major chevrons (silk).....	4	.....	.....	2	2
Quartermaster-sergeant chevrons (silk).....	4	.....	.....	2	2
Campaign coats.....	3,901	.....	.....	1,650	2,251
Helmet trimmings, band leader (sets).....	.....	1	.....	1	.....
Epaulets, band leader.....	.....	1	.....	1	.....
Aiguillettes, band leader.....	.....	1	.....	1	.....
Undress cap, band leader, gold cord and ornament.....	.....	1	.....	1	.....
Blankets (war period).....	.....	1,100	.....	1,100	.....
Brass letters.....	.....	1,125	.....	1,125	.....
Brass figures.....	.....	225	.....	225	.....
Undershirts, light weight.....	.....	5,259	.....	1,005	4,254
Drawers, light weight.....	.....	4,659	.....	1,005	3,654
Undershirts, heavy weight.....	.....	2,812	.....	4	2,808
Drawers, heavy weight.....	.....	2,400	.....	4	2,396

T. C. PRINCE,
Captain and Assistant Quartermaster, United States Marine Corps.

D.—List of articles manufactured at the assistant quartermaster's office, United States Marine Corps, Philadelphia, Pa., during the fiscal year ended June 30, 1898.

Full-dress tunics.....	1,068	Full-dress band trousers.....	4
Campaign coats.....	3,901	First sergeants' chevrons.....	131
Linen coats.....	5,731	Sergeants' chevrons.....	486
Fatigue jackets.....	6,331	Corporals' chevrons.....	914
Overcoats.....	1,698	Service chevrons.....	1,578
Field music coats.....	51	Quartermaster-sergeants' chevrons.....	4
Sergeants' trousers.....	976	Sergeant-majors' chevrons.....	4
Wolfted trousers.....	414	Pillowcases.....	500
Plain woolen trousers.....	7,553	Sheets.....	2,400
Linen trousers.....	6,160	Sergeants' stripes.....	400
Campaign trousers.....	3,804	Band leader's full-dress coat.....	1
Flannel shirts.....	7,027	Band leader's undress coat.....	1
Drawers.....	7,945	Band leader's overcoat.....	1
Pillow sacks.....	15	Band leader's linen coats.....	2
Bedsacks.....	50	Band leader's full-dress trousers.....	1
Full-dress band coats.....	5	Second leader's full-dress coat.....	1
Band jackets.....	33		

Paid out to operatives for the manufacture of the above, \$31,854.40.

T. C. PRINCE,
Captain and Assistant Quartermaster, United States Marine Corps.

CAMP HEYWOOD, SEAVEYS ISLAND,
Navy-Yard, Portsmouth, N. H., September 27, 1898.

SIR: I have the honor to submit the following report of the operations of the quartermaster's department of this battalion since the organization of that force: In obedience to orders, on April 18, 1898, I proceeded to Brooklyn, N. Y., and reported the following morning to Lieut. Col. Robert W. Huntington, United States Marine Corps, for duty as the quartermaster of this battalion. The battalion was organized for service in Cuba under the direction of the commander in chief of the North Atlantic Station, and in due course proceeded by transports to Guantanamo, Cuba, where the command had active service against the enemy.

Previously to my departure from Washington, and before I had reported to Lieutenant-Colonel Huntington, you had procured and directed the shipment to the navy-yard, Brooklyn, for the use of the battalion, ammunition, tents, camp equipage, and clothing necessary for the comfort and efficiency of the command. Quantities of these stores reached Brooklyn before my arrival there. The expedition shows a

procuring such supplies and transporting them to their destination was marked and was very favorably commented on by the commanding officer of the battalion. This should also be said with regard to the quantity and quality of the stores.

At first it was the intention of the Navy Department to have the battalion sail on April 20, but that plan was found impossible of execution owing to the fact that the transport *Panther*, which had been prepared for a battalion of 450 men, could not be made ready for an increase of over 200 men to that strength, which was ordered added to the command. The battalion actually sailed on the 22d of April. The delay in sailing was fortunate, as it enabled me to purchase and receive some necessary articles which in the great haste of preparation had not been obtained. The work of loading the supplies on the *Panther* began on the morning of the 22d, the work continuing throughout the day, and the battalion embarked at 5 p. m., amid a scene of marked enthusiasm on the part of a great crowd of people assembled at the Brooklyn Navy-Yard. The *Panther* sailed at 8 p. m., arriving at Fort Monroe the following evening, where she waited until the morning of the 26th for the *Montgomery*, which vessel convoyed her to Key West. That port was reached on the morning of the 30th. There the *Panther* anchored to await instructions from the commander in chief of the North Atlantic Station.

The battalion remained at Key West over a month. While there I purchased a number of articles, including tent floors, deemed necessary by the commanding officer of the battalion. Excepting the tent floors the purchases were of trivial articles, as the battalion had been so completely and efficiently fitted out under your direction before leaving Brooklyn. At 5 p. m., May 23, orders were received for the battalion to disembark and go into camp, it having been determined that the *Panther* should tow a monitor to Havana. The commandant of the naval station stated that he wished to put the marines "on their mettle" and that the command and all of its stores must be out of the ship by 4 a. m., of the following morning. These orders necessitated the engaging of a lighter, teams, and wharfage, also a storehouse in which to place the stores. These were promptly secured and the work of unloading the ship commenced. By dint of the hardest work on the part of both officers and men the stores were finally landed and the battalion disembarked at 4 a. m. After this night's work my labor began afresh, for the tents, tent floors, cooking outfits, and all required equipage had to be transported by teams to our camp, which was distant about 2 miles from the docks upon which the stores were landed. I completed sending these stores to camp and placing in the storehouse those not required there at 3 p. m. Upon my arrival at camp I found all the tents pitched, floors laid, latrines dug, supper prepared, and, in fact, the whole camp in running order.

The battalion remained in camp for two weeks, and the experience gained thereby by the officers and men was most valuable. The location of the camp was not all that could be desired, but was the best obtainable. Cistern water had to be hauled to it in casks from the town, but, this water not being good, its use in its natural state was discontinued, and thereafter it was only used, both for drinking and cooking, after being boiled.

It was while at this camp that there arrived campaign suits of brown linen, which you had procured. Their issue was hailed with the greatest satisfaction by the officers and men, who had been sweltering for weeks in blue uniforms under a tropical sun. The entire battalion was fitted out, including the officers, who were authorized to wear these suits, and the appearance of the men in this comfortable, businesslike uniform excited favorable comments from Army and Navy officers who came in contact with the battalion. The main purpose of these suits being to afford comfort to the men serving in a tropical clime, it is considered that they fully filled the purpose, and, while subsequent service in Cuba showed that the color of the material is not the best for campaigning, they were of decidedly practical benefit to the command. I shall later ask permission to submit a design for a campaign suit which will, in my opinion, meet the requirements not only of the field, but as a working suit on board ship and in barracks.

A quantity of the new-style shoes was received while the battalion was in camp at Key West. About the same time an invoice of light-weight woolen underwear also arrived. These shoes are undoubtedly the best the Marine Corps has ever had. Such is the expression of opinion of the officers of the battalion, and such is my judgment. These shoes are very comfortable, of good appearance, and they wear exceedingly well. The light-weight underwear was a boon to the enlisted men, for they were wearing the heavy knit shirts and cotton-flannel drawers which for years have been the standard of the Corps. To my knowledge, light-weight underwear has never previously been issued to the enlisted men. They were greatly pleased with the lot issued to them at Key West. The material out of which the new underwear is manufactured is of such superior quality to anything that has been issued in the past that it was at first thought too good for hard field service, where the facilities for washing clothes are necessarily limited, but the men appreciated its comfort and that it could be easily washed, and it soon became very popular. Many of the officers wore the underwear and spoke in praise of it.

Conformably to orders, the battalion again embarked on the *Panther* on June 6 and sailed the following day to join the commander in chief of the North Atlantic Station at Santiago, Cuba. This port was reached without special incident on the morning of the 10th of June. Upon reporting to the commander in chief the battalion was immediately ordered to proceed to Guantanamo, about 40 miles to the eastward, there to be landed under order of Commander B. H. McCalla, U. S. N., commanding the U. S. S. *Marblehead*. With the aid of all the boats and steam cutters of the vessels in the harbor, four companies and most of the equipage were landed that evening. Camp was promptly pitched in a place previously selected on the top of a hill where stood the remains of a Spanish blockhouse, destroyed by the fire of the ships before the battalion landed, and outposts were established. It was a very laborious task carrying the tents, tent poles, cooking outfits, ammunition, intrenching tools, etc., up this hill, which was quite steep, and when night fell the men were completely tired out. They had little or no rest that night, as an attack by the Spanish was expected, they having been heard by the outposts stealthily moving through the paths in front of the camp. The next afternoon the enemy did make an attack and continued it during the entire night, and in the morning it became necessary to strike the tents and get them out of the way in order that the command might intrench itself. This was completed under fire in an orderly manner, and the whole camp outfit was carried over the hill facing the harbor. The trenches were rapidly dug, the men working superbly. Some of the tents had to be used as breastworks in places, and their appearance shows the effects of the Spanish fire, they in some cases being riddled with bullets.

For several days and nights the command was exposed to almost incessant firing, and it was not until after the battle of Cuzco, when companies C and D, under Captain Elliott's command, drove the Spanish away, that we had any rest at all, and even then it was several days before we felt assured that there was to be freedom from further annoyance, it being known that there were 7,000 Spanish troops at Guantanamo, only 15 miles away. For about ten days the men spent all their time in the trenches, which from day to day were perfected, going down the hill for meals by detachments. When more confident of not being further attacked, I gradually brought over from the *Panther* clothing sufficient to meet all demands, and from time to time made requisitions on you and the assistant quartermaster at Philadelphia for such articles as were needed. It is with much pleasure that I record the fact that these requisitions were always filled in the promptest and otherwise satisfactory manner. A quantity of supplies was received by me on the transport *Resolute*, which reached Guantanamo June 21. In these supplies were gray felt campaign hats, which were required and which proved quite comfortable, undress caps being illy adapted to service in a tropical climate. A few days after her arrival the *Resolute* was ordered away, and it became necessary to send ashore all stores belonging to the battalion and to place in tents all those which required protection.

Rations for the enlisted men were procured from the *Panther* and *Resolute* when present, and at other times from the supply ships *Celtic* and *Supply*. Usually I received a ten days' issue. The rations were kept in a rudely constructed storehouse, which served to protect the perishable provisions from the weather. Fresh beef and vegetables were also obtained from these ships to serve out to the command according to the navy allowance. I had an ice house made, by digging a hole in the sand and boarding it on the sides, in which the meat was kept, and this enabled me to obtain a two or three days' issue at a time. We received ice with each issue of fresh beef. The meat was of very superior quality and kept well. First Lieut. James E. Mahoney, United States Marine Corps, had charge of the messing of the men and was particularly zealous and efficient in the discharge of his duty. I turned over to him the daily rations for the men and he made the issues to the companies. The command drank distilled water, which was also used for cooking purposes. This was obtained daily, from the *Panther* and *Resolute* most of the time and for quite a period from the *Fulcan*. I had anticipated that water might not be obtainable on shore and had purchased empty wine casks in Key West. The casks were conveyed to the vessels and returned to the dock in a large sailing launch. The water was distributed from the boat to the various companies of the battalion, whose cooks came to the landing to receive it. The men also filled their canteens at the same place. Under my direction, Sergt. Richard Silvey had charge of the distribution of the water and he performed his duty most satisfactorily. The Cuban officers and soldiers also received their food and water supply from us.

It is my opinion that much of the excellent health of the battalion while in Cuba was due to the fact that distilled water only was used for drinking and cooking. There were other elements that entered into the good health of both officers and men, chief of which were the excellent sanitary arrangements, the use by officers and men of the light-weight woolen underwear, and the absence of tropical fruits from the vicinity of our camp and the fact that the men were at all times supplied with proper and sufficient food and clothing, and it was these that enabled us to bring home 98 per cent of the battalion, fit for duty. Not a single man of the com-

mand died from disease. In this connection I have to recommend, in the event of a battalion of marines being sent out of the United States in the future, that the transport which may be assigned for its use be supplied with one steam cutter and two large sailing launches, as great difficulty was at times experienced in obtaining the use from vessels in the harbor of these boats, which were essential in the landing of provisions and water and also in the embarkation and disembarkation of the battalion.

The camp at Guantanamo was broken August 5, on which day the battalion embarked on the *Resolute* and proceeded to Manzanillo. The battalion remained there but a day and two nights and returned to Guantanamo, where orders were found directing the command to proceed to Portsmouth, N. H., where it remained until the 21st instant.

It has been stated to me by the officers of the battalion who have had previous experience in campaigning that they have never seen a marine battalion so well equipped for all service as this one was, and to make its efficiency still more apparent I have carried out to the fullest extent the directions given me in your communication of April 18, 1898, a copy of which I append herewith, and there has been no requirement of the commanding officer as to necessary equipment that has not been readily supplied.

Wall, hospital, and shelter tents were provided by you before our departure from the United States; tent floors were procured in Key West and proved most useful, not only in legitimate use, but to build traverses, landing stages for the boats, and to strengthen the breastworks, lumber not being obtainable where we were.

The command was amply supplied with Buzzacott cooking outfits, and they gave most satisfactory service, though if some of the utensils were of heavier material they would still be more useful, it being difficult to repair leaks in the boilers in the field. Longer forks and spoons should be added to the equipment of these ovens.

The shovels, spades, picks, and axes furnished us before departure were indispensable in making our position secure, and we had none too many on hand, though the supply seemed very large before they came into actual use.

Mosquito netting was procured by me in New York before we sailed, and with it the men made head nets for themselves that served to protect them from the ceaseless attacks of mosquitoes, which were encountered by the thousands in the woods while on outpost duty during the day and night. This added materially to the men's comfort.

The handcarts and wheelbarrows which I also purchased in New York were most necessary in hauling provisions, clothing, ammunition, water, etc., from one part of the camp to another, and they should always be supplied, if possible, at the rate of one cart and one barrow to each company.

The bloom iron camp kettles did not wear well, and should, I think, be supplanted by galvanized iron buckets of three sizes, which would not rust so easily.

I have heard no special complaints as to the quality of the clothing or military equipments furnished, and the line officers gave the quartermaster's department a great deal of credit for the manner in which the battalion had been fitted out and was kept supplied with all necessary articles to render it efficient.

Some change should be made in the canteen, which very quickly rusts and affects the water. Aluminum is suggested as a substitute. It was found that many of our canteens became useless through the corks rotting or being broken away from the chains.

I recently saw a combination canteen and meat can made of aluminum, with knife, fork, and spoon attached, which was, I think, the invention of an officer of the Sixth United States Cavalry, and it seems to me it would be an improvement on our present pattern.

The campaign hats, of pattern and material the same as the Army wear, were found to be very warm, but I know of no better hat for all around field service in rain and sunshine and to wear while sleeping on the ground than this. I made issues of all clothing and material to the company commanders, taking their receipts therefor, and occupied the same relation toward them as a depot quartermaster. It was found that this system worked satisfactorily, as each captain was thus responsible for supplies furnished to his company.

The following comments are made on the 6-millimeter navy rifle, with which the battalion was armed:

(a) All the time we were at Key West the men were daily instructed in the use of this small arm and had constant target practice, and in this way became familiar with this new arm, which up to that time had been practically untried in the Marine Corps. Subsequent events proved the value of this training.

(b) The consensus of opinion among the officers of this battalion in regard to this rifle seems to be that for intensity, rapidity, and accuracy of fire it is a very superior weapon, and when once the men are acquainted with its proper handling the liability to accident and breaking of spare parts is much lessened, but even so there are some very delicate parts in the gun and they are the ones which gave trouble.

(c) It was found that the trigger spring broke very easily, and a heavier or stronger one would be an improvement.

(d) The follower broke frequently at the hinge rivet.

(e) As the maximum strain is often put on the elevator spring in case of loading with a full clip on an empty chamber and leaving same in that position ten or twelve hours, which was the case every night with the pickets and outposts, it was found that in the morning when the spring was released and the cartridges removed it would frequently break.

(f) The extractor springs (even the new and heavier ones) were found to be incapable of doing the work expected of them, over 800 having been replaced during the campaign. Extra springs were issued to squad and section leaders to repair guns temporarily disabled in action.

(g) The gas check was, in some cases, found to be insecurely riveted and became detached or was broken off.

(h) Owing to the danger of the firing pin locking device it was never used. This, I understand, has been corrected in the new model.

(i) The trigger guard, being open at the bottom, easily collects sand and dirt, which affects the sear fly by throwing it out of place and necessitates taking the gun apart to replace it. A cover of soft waterproof material for the breach of the piece might prevent this to some extent, to be kept on when the rifle is not in action.

(j) As the rear sight is marked for a bullet weighing 135 grains, whereas one of only 112 grains is furnished, it would seem that for accurate firing above point-blank range some change should be adopted.

(k) It is thought an improvement might result if the front sight was made narrow and sharper in order to obtain a finer sight, and this can be readily accomplished now that sight covers are provided.

(l) The above criticisms are not intended to be captions nor are they made entirely upon my own opinions, as all the officers attached to the battalion will bear me out in the statements.

(m) The gun as a whole is a very effective weapon and can be made more so by decreasing the likelihood of breakage and disarrangement when in the hands of inexperienced men. Old soldiers can readily handle it without injury to themselves or the piece, but it should be made safe for both classes.

(n) In one company the most serious accident that happened in action at one time was the breaking of an elevator spring, and the gun was then used as a single loader until the firing ceased.

(o) One officer, Lieutenant Shaw, stated that 25 men under his command on the night of June 11, while on picket duty, fired about 80 rounds per man without failure of the rifle in any respect.

(p) It would thus seem as if the good qualities of the gun offset the defects, and it is thought the latter can be easily remedied. Certainly the rifle did deadly work at ranges varying from 600 to 1,100 yards, as the reports of 68 Spanish killed in the battle of Cuzco will testify.

(q) In moments of excitement there is liability of the bolt being pulled out entirely and the consequent danger of losing the extractor and spring in high grass or sand.

In closing this report I can not omit to state the ready and cheerful assistance that was rendered me by the officers and men of the battalion, which made the discharge of my duties a comparatively easy and always a pleasant one. Working parties of the men, in charge of officers and noncommissioned officers, were placed at my disposal whenever asked for, and the duty, though often disagreeable and exceedingly laborious, was cheerfully and well performed.

The experience and knowledge gained by me on this campaign I regard as particularly valuable, and it is hoped that opportunities may arise when it can be placed to some practical use for the benefit of the Corps.

Very respectfully,

CHAS. L. MCCAWLEY,

Captain and Assistant Quartermaster, Quartermaster First Marine Battalion.

The QUARTERMASTER UNITED STATES MARINE CORPS,

Headquarters, Washington, D. C.

U. S. S. MARBLEHEAD (third rate),

Guantanamo, Cuba, June 12, 1898.

SIR: Be pleased to issue daily rations to all Cuban officers and soldiers now serving with the marines.

Very respectfully,

B. H. MCCALLA,

Commander, United States Navy, Commanding.

Colonel HUNTINGTON,

Commanding United States Marine Force, Guantanamo, Cuba.

HEADQUARTERS, FIRST MARINE BATTALION,
Camp McCalla, Guantanamo, June 12, 1898.

Respectfully referred to battalion quartermaster, with orders to comply with same.
By direction of Lieutenant-Colonel Huntington:

H. L. DRAPER,
First Lieutenant and Adjutant.

HEADQUARTERS UNITED STATES MARINE CORPS,
QUARTERMASTER'S OFFICE,
Washington, D. C., April 18, 1898.

SIR: Referring to the orders of the colonel commandant of this date directing you to proceed to the navy-yard, New York, and report to the commandant of that station for duty as quartermaster of the First Battalion of Marines now being organized there, I have to inform you that, in pursuance of orders from the Secretary of the Navy, it is contemplated that the battalion shall proceed by transport to Key West, Fla., for service under the commander in chief of the North Atlantic Station. It is the particular desire of the colonel commandant and of this office that the First Battalion should be equipped with everything necessary to its efficiency on board ship and in camp. You are therefore authorized to procure such services and supplies as circumstances seem to require to the attainment of that important end. As the First Battalion will probably sail from the Brooklyn Navy-Yard on Wednesday, the 20th instant, you may make purchases without soliciting bids, time not permitting competition. In the procurement of services and supplies you will, in every instance, have due regard for public economy, carefully weighing this consideration with the necessities you will be called upon to deal with. No specific directions are given you, it being impossible to anticipate emergencies which may arise. You are confidently relied upon to exercise zeal and good judgment in the discharge of the duty assigned you.

Very respectfully,

F. L. DENNY,
Major and Quartermaster.

Capt, CHARLES L. MCCAWLEY,
Assistant Quartermaster, United States Marine Corps Headquarters.

ANNUAL ESTIMATES FOR SUPPORT OF MARINE CORPS, FISCAL YEAR
ENDING JUNE 30, 1900.

HEADQUARTERS UNITED STATES MARINE CORPS,
Washington, D. C., August 30, 1898.

SIR: In compliance with the Department's instructions of July 11, 1898, I have the honor to submit, for its approval, the annual estimate for the support of the Marine Corps for the fiscal year ending June 30, 1900.

The paymaster and quartermaster, United States Marine Corps, transmit letters with their estimates explaining them in detail and stating the reasons for the increase in some of the items, and these letters are inclosed for the information of the Department.

It will be seen by the estimates of the paymaster that an increase of \$7,585 is asked for. The reason for this increase is the addition of 1 colonel to the active list, \$4,500; the placing of 1 major on the retired list, \$2,625, and \$2,000 additional for retired enlisted men, making a total of \$9,125, which is decreased by the pay of 1 second lieutenant, \$1,540, 13 having been appropriated for last year and but 12 estimated for this year, leaving a net increase over last year's appropriation of \$7,585, as above stated. By reference to the comparative statement of estimates and appropriations inclosed, it will be seen that, in addition to the regular appropriation for the fiscal year ending June 30, 1899, there was appropriated by the act of May 4, 1898, for the war emergency, \$297,480, for pay, Marine Corps.

The quartermaster's estimates show a gross increase of \$100,457.14 and a decrease of \$6,925, leaving a net increase of \$93,532.14 over last year's appropriation, the necessity for which is stated below. Under the head of clothing there is an increase of \$14,389.14 in the estimates. This increase is necessary on account of the advance in the price of woolen goods, which, when the bids for the present fiscal year were opened, showed an increase of 11 per cent in cost, which is the amount of the duty charged under the tariff law now in force. As it is probable that the same duty will be exacted for the ensuing year, it is important that the increase of 11 per cent, amounting to the sum above given, should be added to the regular appropriation of

\$130,000. For repair of barracks an increase of \$3,000 is asked for. The object of this recommendation is to obtain from Congress authority to procure quarters for enlisted men of the Corps who may, when emergency requires it, be ordered to duty at places in the United States where there are no public quarters, or places outside the United States where there are no such quarters available. Unless such an appropriation is made, neither funds nor authority will exist for the renting, leasing, or building of even temporary quarters. For rent an increase of \$1,300 is estimated for. The \$2,000 hitherto appropriated for the rent of a building for the depot of supplies in Philadelphia was made when the Corps only consisted of 2,100 enlisted men. Since then it has been increased to its full strength of 3,074 men, and it is found that the present building is entirely inadequate for the needs of the service. This is a reasonable increase and it is hoped that the Department will approve it.

Under the head of hire of quarters an increase of \$768 is provided for in order that two enlisted men serving in the quartermaster's office and in the assistant quartermaster's office at these headquarters who are receiving \$10 a month for quarters shall receive the same allowance as their comrades performing the same service, namely, \$21 per month, and that two additional enlisted men, whose services are absolutely necessary, may be detailed, one in the office of the adjutant and inspector and the other in the office of the assistant quartermaster in Philadelphia. The work of these offices has been greatly increased since the addition to the strength of the Corps, and it is impossible to keep the work up to date in the offices named without an additional man in each. Provision for the two men estimated for will be in the line of economy, as it will dispense with the necessity for civilian employees at a salary of at least \$2 per day. The new items provided for in the quartermaster's estimates are \$81,000 for the erection of barracks and officers' quarters at Annapolis, Md.

The last naval appropriation act provided for the construction of new Naval Academy buildings, some of them on the site of the marine barracks and officers' quarters, thus rendering necessary the demolition of the barracks and quarters, which has been accomplished, leaving no provision for quartering the marines required as a guard at that station. When the bill was discussed I was not aware that it was intended to tear down the marine barracks and officers' quarters at Annapolis, no mention of it having been made to me when I was before the Naval Committee of the House of Representatives in connection with the estimates for the Marine Corps, and therefore I was unable to submit any estimates for new barracks and quarters. When the deficiency bill was before Congress estimates for the amount now asked for (\$81,000) were submitted to the Secretary of the Navy, approved by him, and transmitted to Congress, but they were not incorporated in the appropriation. The necessity, therefore, for the appropriation now asked for is apparent, and it is hoped that the amount estimated for will be approved, as the superintendent of the Naval Academy has asked for a full guard, which will have to be quartered temporarily on board ship or in tents. Permanent barracks and quarters should be provided at the earliest practicable date, and it is respectfully submitted that this appropriation should be made immediately available.

In addition to the regular appropriation for the fiscal year ending June 30, 1899, it will be noticed on the inclosed comparative statement of estimates and appropriations that there was appropriated by the act of May 4, 1898, \$270,420 for pay, provisions, etc., for the quartermaster's department, and by the deficiency act, for the six months beginning July 1, 1898, approved July 7, 1898, \$111,400.

The work in all the offices at these headquarters is up to date, having been kept so during the great pressure of business incident to the war, by faithful labor (long overtime when required) on the part of the employees.

It is the endeavor of the colonel commandant to administer the affairs of the Marine Corps as economically as possible, and it is hoped that the Department will see its way clear to approve the above estimates, as submitted.

Very respectfully,

CHARLES HEYWOOD,
Colonel Commandant.

The SECRETARY OF THE NAVY.

HEADQUARTERS UNITED STATES MARINE CORPS,
QUARTERMASTER'S OFFICE.
Washington, D. C., August 29, 1898.

SIR: I have the honor to submit herewith the annual estimates for the support of the quartermaster's department of the United States Marine Corps for the fiscal year ending June 30, 1900. These estimates aggregate \$480,832.04. This sum is \$93,532.14 in excess of that appropriated by Congress for the current fiscal year. Such increase is required, however, to meet the necessary expenses of the Corps that must be incurred.

Pursuant to the long established rule of this office, due regard has been given to public economy in preparing the estimates for the next fiscal year. The following is a table giving the general heads under which appropriations are made by Congress for the Corps, the amounts appropriated for the current year, and those recommended for the ensuing year:

	Appropriation for 1899.	Estimates for 1900.
Provisions.....	\$131,911.50	\$131,911.50
Clothing.....	130,810.40	145,199.54
Fuel.....	19,500.00	19,500.00
Military stores.....	23,297.00	23,297.00
Transportation and recruiting.....	15,060.00	15,000.00
Repair of barracks.....	18,925.00	97,300.00
Forage.....	3,000.00	3,000.00
Hire of quarters.....	7,356.00	8,124.00
Contingent.....	37,500.00	37,500.00
Total.....	387,299.90	480,832.04

In explanation of the foregoing table I beg to submit the following statements:

Provisions.—No change in the appropriation under this head is recommended, the sum made available for the purpose in the current act being deemed sufficient for the next year.

Clothing.—A slight increase under this head is urged. On a recent occasion, when competitive proposals to supply the Marine Corps with articles of uniform were opened in this office, it was found that bidders had raised their prices on woolen goods 11 per cent, which is the amount of duty charged under the tariff law now in force. As the same duty will be exacted for the ensuing year, it is important that an increase of 11 per cent, amounting to \$14,389.14, should be added to the regular appropriation of \$130,810.40.

Fuel.—The estimate under this head is the same as the appropriation for the current fiscal year.

Military stores.—The estimate under this head is the same as the amount appropriated for the current fiscal year. Changes in the language of the item are suggested, and the words “rifles” and “revolvers” and the words “purchase and repair of tents and field ovens” have been inserted. These words do not now appear under the head of military stores. Their procurement is necessary, however, and the omission of the words might permit of the construction that no authority to obtain and repair articles of the kind is given by the act.

Transportation and recruiting.—The estimate therefor is the same as the amount appropriated for the current fiscal year.

Repair of barracks.—Under this head an increase in the appropriation of \$78,375 is necessary.

Under the general clause of the item there has been inserted the words “and at such other place or places where the exigencies of the service require the renting, leasing, or building of barracks.” The object of this recommendation is to obtain from Congress funds and authority with which to procure quarters for enlisted men of the Corps who may, when emergencies require it, be ordered to duty at places within the United States where there are no public quarters or to places outside of the United States where there are no such quarters available. Unless such provision is made, neither funds nor authority would exist for the renting, leasing, or building of even temporary quarters. Three thousand dollars is thought to be a modest sum for the purpose, and in recommending such an increase in the general fund the renting, leasing, or building of only temporary quarters sufficient to afford the men reasonable comfort is contemplated.

A further increase of \$1,500 is recommended, with which to procure additional storage room in the office of the assistant quartermaster at Philadelphia. The addition to the enlisted force of the Corps authorized by the last Congress makes necessary increase in the storage capacity of that officer's office to accommodate the required greater quantity of clothing, camp and garrison equipage, etc., purchased annually.

Also under the same head an appropriation of \$50,000 for a marine barracks, \$9,000 for a commanding officer's quarters, and \$7,000 each for two sets of officers' quarters at the Naval Academy, Annapolis, Md., is recommended, as is \$8,000 for clearing and grading, laying sewers, water pipes, and pavements, erecting fences and a flagstaff, constructing a bridge, and otherwise improving the site upon which the barracks and officers' quarters at that station would be built. Recently the marine barracks and officers' quarters at the Naval Academy were torn down, by authority of the

Secretary of the Navy, for the purpose of making room for new buildings for the Navy, the construction of which was authorized by Congress in the current appropriation bill. There is no building or buildings at the Naval Academy available for the detachment of marines serving there, as the superintendent of the Academy has officially reported, and the erection of a new barracks and three sets of officers' quarters is a public necessity. This matter was submitted to you by this office in the latter days of the last session of Congress; the proposition was approved by the Secretary of the Navy and transmitted to the Senate, but owing to the lateness of the date of submission no action was taken by the Senate. The proposed expenditure is essential to the health and comfort of the detachment of marines at the Naval Academy and is reasonable in amount. The intention is to erect only plain, substantial buildings of sufficient size to accommodate the number of enlisted men and officers who will be stationed at the Academy.

Forage.—No change of the appropriation under this head is recommended.

Hire of quarters.—An increase of \$768 under this head is recommended in order that two enlisted men, one serving in this office and another in the office of the assistant quartermaster at these headquarters, should receive the same allowance for quarters as do their comrades who are employed at the same service.

The estimates also contemplate the detail of two additional enlisted men, at \$21 each per month, in the staff offices of the adjutant and inspector, headquarters, and the assistant quartermaster at Philadelphia. The work of these offices has materially increased since the addition to the strength of the Corps under authority of Congress. I am of the opinion that this recommendation is justified under all the circumstances, and that it should be favorably acted upon. Such action would be in the line of economy and would dispense with the necessity of employing civilian laborers at \$2 per diem.

Contingent.—The sum made available for the current fiscal year is thought to be sufficient for the ensuing fiscal year, and no changes in the amount are recommended. Slight changes in the language of this item are inserted in the estimates, more carefully to express what may be procured and what habitually is procured under contingent. The absence of the inserted words might make possible the construction that the procurement of the articles is not warranted by law.

Very respectfully,

F. L. DENNY,

Major and Quartermaster, United States Marine Corps.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,

Headquarters, Washington, D. C.

HEADQUARTERS UNITED STATES MARINE CORPS,
PAYMASTER'S OFFICE,
Washington, D. C., August 30, 1898.

SIR: Herewith I transmit estimates, in triplicate, for pay Marine Corps for the fiscal year ending June 30, 1900.

These estimates show a net increase above the amount appropriated for the current year of \$7,585, viz:

Increase:

Active list of officers, one colonel.....	\$4,500
Retired list of officers, one major.....	2,625
Retired enlisted men.....	2,000
	<hr/>
	9,125

Decrease:

One lieutenant (thirteen were appropriated for in the appropriation for 1889)	1,540
	<hr/>

Net increase 7,585

Very respectfully,

G. C. GOODLOE,
Major, Paymaster.

The COLONEL COMMANDANT UNITED STATES MARINE CORPS,

Headquarters, Washington, D. C.

Comparative statement of estimates and appropriations, 1899-1900, Navy Department.

For Marine Corps.	Estimates, 1899.	Appropri- ated, 1899.	Estimates, 1900.	Increase of estimates for 1900 over amount ap- propriated for 1899 for same pur- pose.	Decrease of estimates for 1900 as com- pared with amount ap- propriated for 1899 for same purpose.	New items, 1900.
Provisions.....	\$131,911.50	\$131,911.50	\$131,911.50			
Clothing.....	130,810.40	130,810.40	145,199.54	\$14,389.14		
Fuel.....	19,500.00	19,500.00	19,500.00			
Military stores.....	23,297.00	23,297.00	23,297.00			
Transportation and re- cruiting.....	15,000.00	15,000.00	15,000.00			
Repair of barracks.....	10,000.00	10,000.00	13,000.00	3,000.00		
Repair of barracks (rent).	2,000.00	2,000.00	3,300.00	1,300.00		
Repair of barracks (An- napolis).....			50,000.00			\$50,000.00
Do.....			9,000.00			9,000.00
Do.....			14,000.00			14,000.00
Do.....			8,000.00			8,000.00
Do.....	1,500.00	1,500.00			\$1,500.00	
Repair of barracks (Mare Island).....	5,425.00	5,425.00			5,425.00	
Forage.....	3,000.00	3,000.00	3,000.00			
Hire of quarters.....	7,356.00	7,356.00	8,124.00	768.00		
Contingent.....	37,500.00	37,500.00	37,500.00			
Total.....	387,299.90	387,299.90	480,832.04	19,457.14	6,925.00	81,000.00
Appropriation for tempo- rary force during exist- ing war, pay, provi- sions, etc., 1898-99, ap- proved May 4, 1898.....	a270,420.00	a270,420.00				
Emergency fund, defi- ciency for six months beginning July 1, 1898, approved July 7, 1898...	111,400.00	111,400.00				

a Amount allotted to quartermaster's department out of stated appropriations, which amount added to the allotment to the pay department makes \$567,900.

*Estimates of appropriations required for the service of the fiscal year ending June 30, 1900,
by the quartermaster United States Marine Corps.*

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of ap- propriation.	Amount appropriated for the current fiscal year ending June 30, 1899.
Provisions: For 1,973 noncommissioned officers, musicians, and pri- vates, and for the commutation of rations to 16 en- listed men detailed as clerks and messengers; also for payment of board and lodging of recruiting par- ties, said payment for board not to exceed \$2,500; and no law shall be construed to entitle marines on shore duty to any rations or commutations therefor other than such as now are or may hereafter be al- lowed to enlisted men in the Army.....		\$131,911.50	\$131,911.50
Clothing: For 3,074 noncommissioned officers, musicians, and pri- vates.....		145,199.54	130,810.40
Fuel: For heating barracks and quarters, for ranges and stoves for cooking, fuel for enlisted men, for sales to officers, maintaining electric lights, and for hot- air closets.....		19,500.00	19,500.00

Estimates of appropriations required for the service of the fiscal year ending June 30, 1888, by the quartermaster United States Marine Corps—Continued.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1888.
Military stores: For pay of chief armorer, at \$3 per day; 3 mechanics, at \$2.50 each per day; purchase of military equipments, such as rifles, revolvers, cartridge boxes, bayonet scabbards, haversacks, blanket bags, knapsacks, canteens, musket slings, swords, drums, trumpets, flags, waist belts, waist plates, cartridge belts, sashes for officer of the day, spare parts for repairing muskets, purchase of ammunition, purchase and repair of tents and field ovens, purchase and repair of instruments for band, purchase of music and musical accessories, medals for excellence in gunnery and rifle practice, good-conduct badges, incidental expenses in connection with the school of application, signal equipment and stores, binocular glasses, for the establishment and maintenance of targets and ranges, for hiring established ranges, and for procuring, preserving, and handling ammunition		\$23, 297. 00	\$23, 297. 00
Transportation and recruiting: For transportation of troops, including ferriage, and the expense of recruiting service		15, 000. 00	15, 000. 00
Repair of barracks: At Portsmouth, N. H.; Boston, Mass.; Newport, R. I.; Brooklyn, N. Y.; League Island, Pa.; Annapolis, Md.; headquarters and navy-yard, District of Columbia; Norfolk, Va.; Port Royal, S. C.; Pensacola, Fla.; Mare Island, Cal.; Bremerton, Wash., and Sitka, Alaska; and at such other place or places where the exigencies of the service require the renting, leasing, or erection of barracks, and per diem for enlisted men employed under the direction of the quartermaster's department on the repair of barracks and other public buildings	\$13, 000. 00		
For rent of building used for manufacture of clothing, storing supplies, and office of assistant quartermaster, Philadelphia, Pa.	3, 300. 00		
For erection and completion of a building for marine barracks, Annapolis, Md.	50, 000. 00		
For erection and completion of commanding officer's quarters, Annapolis, Md.	9, 000. 00		
For erection and completion of two sets of officers' quarters, Annapolis, Md., at \$7,000 each.	14, 000. 00		
For clearing and grading; laying sewers, water pipes, and pavements; erecting fences and flagstaff, and otherwise improving site for marine barracks and officers' quarters, and building a bridge to connect same with Naval Academy inclosure, Annapolis, Md.	8, 000. 00	97, 300. 00	18, 925. 00
Forage: For forage in kind for five horses of the quartermasters department and the authorized number of officers' horses		3, 000. 00	3, 000. 00
Hire of quarters: For hire of quarters for officers serving with troops where there are no public quarters belonging to the Government, and where there are not sufficient quarters possessed by the United States to accommodate them	4, 500. 00		
For hire of quarters for 11 enlisted men employed as clerks and messengers in commandant's, adjutant and inspector's, paymaster's, and quartermaster's offices and the offices of the assistant quartermasters, Washington, D. C., and Philadelphia, Pa., and for the leader of the Marine Band, \$21 each per month.	3, 024. 00		
For hire of quarters for five enlisted men, employed as above, at \$10 each per month.	600. 00	8, 124. 00	7, 254. 00

Estimates of appropriations required for the service of the fiscal year ending June 30, 1900, by the quartermaster United States Marine Corps—Continued.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1899.
Contingent: For freight, tolls, cartage, advertising, washing of bed-sacks, mattress covers, pillowcases, towels, and sheets, funeral expenses of marines, stationery and other paper, telegraphing, rent of telephones, purchase and repair of typewriters, apprehension of stragglers and deserters, per diem of enlisted men employed on constant labor for a period not less than ten days, repair of gas and water fixtures, office and barracks furniture, camp and garrison equipage and implements, mess utensils for enlisted men—such as bowls, plates, spoons, knives and forks, tin cups, pans, pots, etc.; packing boxes, wrapping paper, oilcloth, crash, rope, twine, camphor and carbolized paper, carpenters' tools, tools for police purposes, iron safes, purchase and repair of public wagons, purchase and repair of public harness, purchase of public horses, services of veterinary surgeons and medicines for public horses, purchase and repair of horse, purchase and repair of fire extinguishers, purchase of fire hand grenades, purchase and repair of carts, wheelbarrows, and lawn mowers; purchase and repair of cooking stoves, ranges, stoves, and furnaces where there are no grates; purchase of ice, towels, soap, combs, and brushes for offices, postage stamps for foreign postage, purchase of books, newspapers, and periodicals; improving parade grounds, repair of pumps and wharves, laying drain, water, and gas pipes, water, introducing gas, and for gas, gas oil, introduction of electric lights; straw for bedding, mattresses, mattress covers, pillows, sheets, wire-bunk bottoms for enlisted men at various posts; furniture for Government quarters and repair of same, and for all emergencies and extraordinary expenses arising at home and abroad, but impossible to anticipate or classify		\$37,500.00	\$27,500.00
Total		480,832.04	387,380.90

Comparative statement of estimates and appropriations, 1899-1900, Navy Department.

Pay Marine Corps.	Estimates, 1899.	Appropriated, 1899.	Estimates, 1900.	Increase of estimates for 1900 over amount appropriated for 1899 for same purpose.	Decrease of estimates for 1900 as compared with amount appropriated for 1899 for same purpose.	New items, 1900.
Regular	\$878,454.23	\$878,554.23	\$886,139.23	\$7,685.00	\$1,540.00	\$4,500.00
Act approved May 4, 1899, war emergency	\$297,480.00	\$297,480.00			\$297,480.00	
Total	1,175,934.23	1,176,034.23			298,020.00	

a One colonel.

b Amount allotted to pay department out of stated appropriation in the act entitled "An act making appropriations for the naval service for the fiscal year ending June 30, 1899, and for other purposes" approved May 4, 1899, for "Pay, provisions, etc., Marine Corps, 1898-99," which amount, added to the allotment of \$270,420 for the quartermaster's department, makes the total amount of the appropriation \$557,940 under that head.

*Estimates of appropriations required for the service of the fiscal year ending June 30,
by the paymaster of the United States Marine Corps.*

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the year ending June 30.
PAY MARINE CORPS.			
Pay of officers on the active list: One colonel commandant, 2 colonels, 2 lieutenant-colonels, 1 paymaster, 1 adjutant and inspector, 1 quartermaster, 4 majors, 2 assistant quartermasters, 20 captains, 30 first lieutenants, and 12 second lieutenants.	\$183,820.00	\$183,820.00	\$183,820.00
Pay of officers on the retired list: One colonel, 1 lieutenant-colonel, 1 adjutant and inspector, 2 quartermasters, 1 major, 9 captains, 3 first lieutenants, and 3 second lieutenants.	45,795.00	45,795.00	45,176.00
Pay of noncommissioned officers, musicians, and privates. One sergeant-major, 1 quartermaster-sergeant, 1 leader of the band, 1 drum major, 50 first sergeants, 150 sergeants, 220 corporals, 30 musicians, 120 drummers and fifers, and 2,500 privates, and the number of enlisted men authorized as above for the Marine Corps shall be exclusive of those undergoing imprisonment with sentence of dishonorable discharge from the service at expiration of confinement, and for the expenses of clerks of the United States Marine Corps traveling under orders.	509,888.00	509,888.00	509,888.00
Pay and allowances of retired enlisted men. One sergeant-major, 2 drum majors, 5 first-class musicians, 16 first sergeants, 23 sergeants, 4 corporals, 1 drummer, 2 fifers, and 58 privates, and for those who may be retired during the year.	34,000.00	34,000.00	32,000.00
Undrawn clothing Pay of discharged soldiers for clothing undrawn.	23,000.00	23,000.00	23,000.00
Mileage Mileage of officers traveling under orders without troops Commutation of quarters to officers on duty without troops where there are no public quarters.	8,000.00 4,000.00	8,000.00 4,000.00	8,000.00 4,000.00
PAY OF CIVIL FORCE.			
In the office of the colonel commandant. One chief clerk One messenger, at \$80.94 per month.	1,540.80 971.28		
In the office of the paymaster: One chief clerk One clerk One clerk	1,000.00 1,496.52 1,257.12		
In the office of the quartermaster: One chief clerk One clerk One clerk	1,540.80 1,496.52 1,257.12		
In the office of the adjutant and inspector One chief clerk One clerk	1,540.80 1,496.52		

Estimates of appropriations required for the service of the fiscal year ending June 30, 1900, by the paymaster of the United States Marine Corps—Continued.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year, ending June 30, 1899.
PAY OF CIVIL FORCE—continued.			
In the office of the assistant quartermaster, Washington, D. C., or San Francisco, Cal.:			
One clerk	1,400.00	.....	.....
In the office of the assistant quartermaster, Philadelphia, Pa.:			
One clerk	1,400.00	.....	.....
One messenger, at \$1.75 per diem	638.75	.....	.....
Total pay of civil force..	17,636.23	17,636.23	17,636.23
Total pay Marine Corps.	886,139.23	886,139.23	878,554.23

Statement of accepted proposals for laundry service.

Station.	Contractors.	Articles per hundred.				
		Mattress covers.	Bed sacks.	Sheets.	Pillow-cases.	Towels.
Portsmouth, N. H.....	W. H. Phinney	\$4.00	\$3.00	\$3.00	\$3.00	\$2.00
Boston, Mass	L. C. Smith	1.00	1.00	.60	.50	.35
Newport, R. I.....	City Steam Laundry Co ...	2.00	2.00	1.50	1.00	1.00
Brooklyn, N. Y	J. P. Taaffe	3.25	3.25	2.75	3.00	2.75
Philadelphia, Pa	Campbell & Goddard	2.00	2.00	2.00	2.00	2.00
Washington, D. C.....	W. H. Belford.....	2.73	2.73	1.93	1.63	1.63
Annapolis, Md.....	Laura Hoff	5.00	5.00	2.50	1.25	.....
Norfolk, Va.....	S. S. Kelly	1.50	1.50	1.50	1.50	1.50
Port Royal, S. C.....	Mary Ann Smith.....	5.00	.....	4.00	2.00	1.00
Pensacola, Fla. a .....	.....	.....	.....	.....	.....	.....
Mare Island, Cal.....	Samuel Sadler.....	3.00	8.00	3.00	2.00	2.00
San Francisco, Cal. b .....	.....	.....	.....	.....	.....	.....
Bremerton, Wash.....	W. A. McCutchin.....	2.00	2.00	2.00	2.00	2.00
Sitka, Alaska b .....	.....	.....	.....	.....	.....	.....

a No award.

b No bids received.

Statement of accepted proposals for supplies for the Marine Corps under advertisement dated May 7, 1898.

Name.	Class.	Amount.	Name.	Class.	Amount.
J. J. Shannon.....	3	\$39.78	Manhattan Supply Co.....	1-3	\$1,990.00
H. E. Wurlitzer	2	14.92	W. H. Horstmann & Co	1, 2	11,031.85
John Galbraith.....	3	1,127.52	Wm. Hodges & Co.....	3	417.14
C. B. Edwards.....	3	4.65	B. Y. Pippey & Co.....	1	3,334.50
E. R. Lyon	1	770.00	The Germania Mills.....	1	8,476.00
Louis Sichel.....	3	930.00	P. J. Field.....	2, 3	554.68
H. T. Kent	1	11,367.00	John Wanamaker.....	1-3	3,134.02
Thos. G. Hood	1	9,574.39	C. W. Hayes.....	1	2,592.50
S. G. French.....	1, 2	7,280.87	C. S. Child.....	1	1,721.37
Thos. Kelly	1	1,300.00	Geo. Campbell.....	1	10,598.85
R. P. Clarke.....	1-3	1,134.00	John Early & Co.....	1	14,995.54
— J. Devitt	3	418.26			

Statement of accepted proposals for stationery for the Marine Corps, under advertisement dated May 7, 1898.

Name.	Amount.	Name.	Amount.
Detre & Blackburn.....	\$664.01	D. A. Tower.....	\$141.04
Easton & Rupp.....	491.27	Old Dominion Paper Co.....	101.44
R. C. Ballantyne	246.10	Shea, Smith & Co	23.20

Statement of accepted proposals for ice for the Marine Corps, under advertisement dated May 7, 1898.

Station.	Contractor.
Washington, D. C.....	Hygienic Ice Company.

Statement of accepted proposals for forage for the Marine Corps, under advertisement dated May 7, 1898.

Station.	Contractor.	Station.	Contractor.
Portsmouth, N. H.....	W. H. Belford.	Washington, D. C.....	J. J. O'Day.
Boston, Mass	Do.	Annapolia, Md.....	W. H. Belford.
Newport, R. I.....	Do.	Norfolk, Va.....	Do.
Brooklyn, N. Y	C. L. Rickerson.	Mare Island, Cal.....	M. L. Kelly.
League Island, Pa	W. H. Belford.		

Schedule of proposals received for supplying rations to the United States Marine Corps for the year ending June 30, 1899, under advertisement dated May 7, 1898.

Names of contractors.	Portsmouth, N. H.	Boston, Mass.	Newport, R. I.	Brooklyn, N.Y.	League Island, Pa.	Annapolia, Md.	Washington, D.C.
Ed DeGroff							
Louch, Augustine & Co							
M. L. Kelly.....							
Owen Lee Williams.....							
J. C. Ergood & Co.....					a \$22. 11	\$21. 11	\$18. 11
Andrew Koch.....				\$17. 47			
Patrick H. Horgan.....			\$24. 50				
F. W. Scheper, jr							
James McGarry.....							
Clarence M. Prince.....	\$22. 50						
W. E. Campbell							
Cochran & Collins							
Charles A. Simons		a \$18. 64					
Terrance Brady.....					23. 50		
Eastern Dressed Beef Co		22. 00					
Charles S. Hewlet.....						a 18. 50	18. 50
W. H. Belford	28. 00	22. 00	a 24. 21	20. 00	24. 21		
J. T. Regan			25. 50				
Aaron Marx		19. 50		a 17. 00			20. 00
H. R. Paul.....	a 21. 75						
Frank Hume.....						21. 75	a 18. 75
Charles E. Danner & Co.....							
G. V. Johnson b.....							

Names of contractors.	Norfolk, Va.	Port Royal, S. C.	Pensacola, Fla.	Mare Island, Cal.	Bremerton, Wash.	Sitka, Alaska.	Key West, Fla.
Ed DeGroff						a \$38. 00	
Louch, Augustine & Co.....					a \$20. 00		
M. L. Kelly.....				a \$17. 00			
Owen Lee Williams.....	\$20. 50						
J. C. Ergood & Co.....	18. 11						
Andrew Koch.....							
Patrick H. Horgan.....		\$39. 90					
F. W. Scheper, jr				20. 00			
James McGarry.....							
Clarence M. Prince.....		a 35. 00					
W. E. Campbell				18. 98			
Cochran & Collins							
Charles A. Simons							
Terrance Brady.....							
Eastern Dressed Beef Co							
Charles S. Hewlet.....							
W. H. Belford	26. 00						
J. T. Regan							
Aaron Marx	a 16. 00						
H. R. Paul.....							
Frank Hume.....							
Charles E. Danner & Co.....		50. 00					
G. V. Johnson b.....							a \$7. 00

a Accepted. b Advertisement dated June 9, 1898.

Schedule of proposals received for supplying wood and coal to the United States Marine Corps for the year ending June 30, 1889, under advertisement dated May 7, 1888.

Names of bidders.	Wood per cord.					Coal per ton.				
	Oak in stick.	Pine in stick.	Pine (chopping) sawed and split.	It is in a cut (Wellington).	Red oak (stave).	White oak (egg).	White oak (stave).	White oak (furnace).	White oak (stave).	White oak (egg).
Portsmouth, N. H.:										
Elmer Langton	\$4.00	\$4.00								
Gray & Prince							\$2.00	\$2.00		
J. A. & A. W. Walker	6.00	\$3.75					\$2.50	\$2.15		
S. G. French	6.75	6.50					\$2.25	\$2.00		
Boston, Mass.:										
J. E. Lewis & Co.	\$6.00	7.00	\$12.00			\$5.00	\$5.00	\$5.00		
S. G. French							7.00	6.75		
Newport, R. I.:										
Pennington & Manchester	\$7.50	\$7.50			\$25.00	\$2.00	\$2.25	\$2.00		
S. G. French					7.50	6.50	6.50	6.00	\$25.00	
Brooklyn, N. Y.:										
E. Morganstern	7.25	7.25					4.25	\$4.71		
J. K. Wells										
C. Daley	\$6.00	\$6.00								
J. J. Convery	9.85	9.85					5.00	5.00		
S. G. French	7.50	7.50					\$4.24	6.00		
League Island, Pa.:										
Thomas McConnell	8.00	\$7.50				4.70	4.80		4.70	
J. J. Convery	8.05	8.05				4.80	4.90		4.75	
J. W. Mathers & Sons	\$8.00	9.00	11.00			\$4.00	\$4.70		\$4.00	
S. G. French						5.20	5.50		6.20	
Annapolis, Md.:										
S. G. French						6.20				
H. B. Myers		\$2.00				\$5.00				
Washington, D. C.:										
W. B. Baum	\$4.25	\$4.25				4.20	4.30	4.30		
V. B. Johnson	5.25	5.25	6.00		4.90	\$4.00	\$4.00	\$4.15		
Norfolk, Va.:										
Toms Creek Coal and Coke Co.							5.30	5.10		
W. & J. Parker							5.00	5.15		
The Nottingham Wrenn Co.	\$4.90	\$4.90					5.45	5.25		
G. W. Taylor & Co.							\$5.34	\$4.90		
S. G. French							6.00	6.20		
Port Royal, S. C.:										
H. K. Walker		\$4.00					\$6.95			
S. G. French							9.50			
Mare Island, Cal.:										
J. R. Aden	\$12.45	\$12.45		\$12.00						
John L. Howard				\$9.75						\$13.75
S. G. French				11.25		\$16.75				16.00
Sitka, Alaska:										
Ed De Groff				\$15.00						
Bremerton, Wash.:										
John L. Howard										19.00
Offices and officers' quarters, Philadelphia, Pa.:										
Thomas McConnell			\$9.00	\$4.75	\$4.70					
J. J. Convery			11.50	4.75	4.75					
J. W. Mathers & Sons			11.00	5.00	4.80					
Offices and officers' quarters, Washington, D. C.:										
W. H. Baum			6.00	5.50		5.20	4.75			
V. B. Johnson	5.25	5.25	\$6.00	\$4.90	4.80	\$4.00	\$4.15			
Officers' quarters, Norfolk, Va.:										
Toms Creek Coal and Coke Co.							\$5.20	\$5.10		
The Nottingham Wrenn Co.			\$5.35			5.35			5.25	
G. W. Taylor & Co.				5.00		5.45		5.20		

\$ Accepted.

. REPORT

OF THE

SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., November 22, 1898.

SIR: I have the honor to submit herewith the annual report of the Department of the Interior.

Reviewing briefly the work of all the bureaus under the supervision of the Department, I desire to commend to your especial attention the accompanying reports in extensive detail of the Commissioners of Indian Affairs and of the General Land Office.

The Indian Office conducts the philanthropic work of the Government in promoting the civilization, education, and general well being of the Indians. It disburses many millions of dollars and supervises the conduct of the large Indian reservations and the schools.

Without detracting in any wise from the faithful work of former Commissioners, I wish to make acknowledgment of the very able and conscientious conduct of this Bureau by Commissioner W. A. Jones during the past year, which has been in many respects the most trying year in the conduct of Indian affairs since Indian wars ceased. The Commissioner is entitled to the cordial support of all who are interested in the welfare of the Indians.

I also wish to cordially commend the conduct of the General Land Office by Commissioner Binger Hermann. I am indebted to him and to Director Charles D. Walcott, of the Geological Survey, for most valuable aid in the establishment of the new forestry policy authorized by law, which, if continued, as it doubtless will be, by further liberal aid of Congress, will prove a blessing to the country for all time. I make acknowledgment also for the cheerful and valuable aid always rendered in the conduct of the vast business of the Department by the Assistant Secretaries, the Heads of the various Bureaus, the Chief Clerk of the Department and the chiefs of divisions of the Secretary's office.

GENERAL LAND OFFICE.

By the act of August 7, 1789, the Secretary of War was intrusted with the duty of granting lands to persons entitled thereto for military services rendered the United States.

By the act of September 2, 1789, the Secretary of the Treasury was charged with certain duties touching the sale of public lands, which was extended by the acts of May 18, 1796, and May 10, 1800. Under the latter acts the Secretary of State was authorized to countersign and record in his office land patents.

The General Land Office was created by act of April 25, 1812, and, under the supervision of the Secretary of the Treasury, was charged with execution of all laws relating to the public lands. It remained under such supervision until the 3d of March, 1849, when, by the act of that date creating the Department of the Interior, it was transferred to this Department.

The public domain, exclusive of the water surface, comprises the lands now owned or heretofore disposed of by the United States acquired by cessions from the original States; purchases from France, Spain, Mexico, Russia, and Texas; by treaty with Mexico, and by discovery and treaty in the Oregon country. It is estimated to contain 1,835,017,692 acres.

In my last annual report, reference was made to the acquisition of these lands as well as the apportionment thereof among the several States and Territories was given, the acreage, etc., therein specified having been compiled from the work known as "The Public Domain."

Since that time the Commissioner of the General Land Office has ascertained that the northwestern portion of the Louisiana purchase has been erroneously delineated on the previous Land Office maps of the United States, in that said purchase has been heretofore shown to extend to the Pacific Ocean instead of terminating on and having its northwestern boundary line defined by the Continental Divide. This error has been corrected on the forthcoming map of the United States for 1898, and the area contained between the Continental Divide and the Pacific Ocean, on the east and west, respectively, and the forty-second and forty-ninth degrees of north latitude, has been properly indicated as having been acquired by discovery in 1792, exploration in 1805, Astoria settlement in 1811, and Florida treaty in 1819.

In consequence of this change in the cession boundaries, which are indicated on the map accompanying this report, showing the territorial growth of the United States, it is therefore necessary to again state the sources from which the public domain was obtained and the apportionment of the lands embraced therein among the several States and Territories, as follows:

	Acres.
State cession (western reserve).....	268,452,639
Louisiana purchase from France, April 30, 1803.....	561,272,637

	Acres.
Oregon country, by discovery and treaty with Spain.....	181, 291, 018
Florida purchase from Spain, February 22, 1819.....	41, 972, 340
Mexico cession, treaty of February 2, 1848.....	328, 749, 635
Texas purchase, November 25, 1850.....	64, 607, 433
Gadsden purchase from Mexico, December 30, 1853.....	29, 142, 400
Alaska purchase from Russia, March 30, 1867	369, 529, 600
Total	1, 835, 017, 692

The apportionment of the lands comprising the public domain among the various States and Territories was as follows, to wit:

Cessions by the original States.

	Acres.
Alabama, north of 31° N. (from Georgia and South Carolina).....	31, 186, 000
Indiana (from Virginia).....	21, 637, 760
Illinois (from Virginia)	35, 465, 093
Michigan (from Virginia)	36, 819, 000
Minnesota, east of Mississippi River (from Virginia).....	15, 922, 800
Mississippi, north of 31° N. (from Georgia and South Carolina).....	27, 381, 000
Ohio (from Virginia and Connecticut).....	25, 581, 976
Tennessee (from North Carolina).....	29, 184, 000
Wisconsin (from Virginia)	35, 275, 000
Total	258, 452, 629

Louisiana purchase from France, April 30, 1803.

	Acres.
Arkansas	33, 543, 500
Colorado, east of Rocky Mountains and north of Arkansas River	36, 508, 000
Iowa	35, 646, 900
Indian Territory	19, 575, 040
Kansas, except southwest corner	47, 239, 870
Louisiana, except portion east of Mississippi River.....	25, 931, 348
Minnesota, west of the Mississippi	35, 766, 640
Missouri	43, 796, 000
Montana, except portion west of Rocky Mountains.....	77, 911, 720
Nebraska	49, 137, 339
North Dakota.....	44, 910, 000
Oklahoma, east of 100° west	20, 818, 680
South Dakota	46, 523, 500
Wyoming, except southwest portion	43, 965, 000
Total.....	561, 272, 637

Oregon country.

	Acres.
Oregon	61, 626, 218
Washington	42, 746, 320
Idaho.....	52, 830, 200
Wyoming, northwest portion.....	7, 942, 400
Montana, west of the Rocky Mountains	16, 145, 280
Total.....	181, 291, 018

Florida purchase from Spain, February 22, 1819.

	Acres.
Alabama, south of 31° N.....	1, 472, 000
Florida	35, 264, 500
Mississippi, south of 31° N.....	2, 304, 000
Louisiana, east of the Mississippi River	2, 931, 840
Total	41, 972, 840

Mexico cession, treaty of February 2, 1848.

	Acres.
Arizona, north of Gadsden purchase.....	52, 550, 100
California	99, 361, 083
Colorado, west of the Rocky Mountains.....	18, 362, 650
Nevada.....	70, 336, 500
New Mexico, west of the Rio Grande and north of the Gadsden purchase.	27, 374, 182
Utah	52, 580, 000
Wyoming, southwest corner.....	8, 185, 120
Total	328, 749, 635

Texas purchase, November 25, 1850.

	Acres.
Colorado, central and southeastern part.....	11, 520, 000
Kansas, southwest corner	5, 143, 130
New Mexico, east of the Rio Grande.....	41, 922, 823
Oklahoma, west of 100° west.....	3, 681, 000
Wyoming.....	2, 340, 480
Total	64, 607, 433

Gadsden purchase from Mexico, December 30, 1853.

	Acres.
Arizona, south part.....	20, 242, 400
New Mexico, southwest corner.....	8, 900, 000
	29, 142, 400

Alaska purchase from Russia, March 30, 1867.

	Acres.
Alaska.....	369, 529, 000

VACANT PUBLIC LANDS, WITH AREA RESERVED AND APPROPRIATED.

Reports have been received from the various local land offices giving an approximate estimate of the quantity of vacant public lands, together with the area reserved and appropriated, in the several land districts at the close of the fiscal year ended June 30, 1898, of which the following is presented as a recapitulation:

State or Territory.	Area unappropriated and unreserved.			Area reserved.	Area appropriated.	Total area of land surface.
	Surveyed.	Unsurveyed.	Total.			
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Alabama	522, 373	.....	522, 373	86, 240	32, 049, 887	32, 658, 000
Arizona	11, 930, 820	42, 438, 203	54, 369, 023	12, 738, 022	5, 685, 455	72, 792, 500
Arkansas	3, 696, 990	.....	3, 696, 990	1, 920	29, 844, 590	33, 543, 500
California	34, 272, 434	8, 230, 589	42, 503, 023	16, 189, 170	40, 668, 890	99, 361, 063
Colorado	35, 273, 705	4, 434, 846	39, 708, 551	6, 225, 533	20, 456, 566	66, 390, 650
Florida	1, 592, 893	164, 382	1, 757, 275	19, 840	33, 487, 385	35, 264, 500
Idaho	11, 268, 786	32, 939, 163	44, 207, 949	1, 939, 869	6, 682, 382	52, 830, 260
Indian .....	.....	.....	.....	19, 575, 040	.....	19, 575, 040
Iowa .....	.....	.....	.....	.....	35, 228, 800	35, 228, 800
Kansas	1, 060, 883	.....	1, 060, 883	987, 875	50, 834, 242	52, 388, 000
Louisiana	690, 527	65, 018	755, 545	1, 474, 834	26, 682, 809	28, 863, 188
Michigan	505, 895	.....	505, 895	87, 746	36, 225, 859	36, 819, 000
Minnesota	3, 246, 498	2, 473, 828	5, 720, 326	4, 963, 409	40, 985, 705	51, 689, 440
Mississippi	383, 950	.....	383, 950	.....	29, 301, 050	29, 685, 000
Missouri	445, 911	.....	445, 911	.....	43, 350, 089	43, 796, 000
Montana	16, 932, 837	54, 674, 779	71, 607, 616	11, 424, 213	12, 227, 891	96, 259, 720
Nebraska	10, 548, 450	.....	10, 548, 450	70, 522	38, 518, 367	49, 137, 339
Nevada	29, 179, 480	32, 179, 129	61, 358, 609	5, 983, 409	2, 994, 482	70, 336, 500
New Mexico	42, 960, 793	13, 917, 042	56, 877, 835	6, 029, 448	15, 289, 722	78, 197, 005
North Dakota	11, 717, 278	8, 857, 335	20, 574, 613	3, 050, 610	21, 277, 764	44, 902, 987
Oklahoma	7, 004, 362	2, 860	7, 007, 222	7, 207, 160	10, 539, 281	24, 753, 663
Oregon	24, 095, 763	11, 802, 106	35, 897, 869	5, 467, 702	20, 260, 647	61, 626, 218
South Dakota	10, 890, 284	2, 092, 542	12, 982, 826	10, 922, 506	24, 253, 223	48, 158, 555
Utah	9, 816, 110	34, 121, 786	43, 937, 896	5, 383, 467	3, 258, 637	52, 580, 000
Washington	5, 319, 428	8, 123, 154	13, 442, 582	11, 131, 345	18, 110, 157	42, 684, 084
Wisconsin	413, 799	.....	413, 799	365, 853	34, 495, 848	35, 275, 000
Wyoming	42, 946, 064	6, 135, 209	49, 081, 263	8, 171, 043	5, 180, 694	62, 433, 000
Grand total..	816, 716, 303	262, 651, 971	579, 368, 274	189, 516, 276	637, 339, 422	1, 356, 228, 972

This aggregate is exclusive of Ohio, Indiana, and Illinois, in which, if any public land remains, it consists of a few small isolated tracts. Alaska, which contains about 577,390 square miles or 369,529,600 acres of land, mostly unsurveyed and unappropriated, is also excluded.

PUBLIC LANDS DISPOSED OF—The disposal of public lands during the fiscal year is as follows: Cash sales, 632,735.74 acres; miscellaneous entries, 7,788,967.99 acres; Indian lands, 32,193.19 acres; aggregating 8,453,896.92 acres. This shows an increase of 614,780.26 acres as compared with the aggregate disposals for the preceding fiscal year.

The total cash receipts during the year from various sources, including disposal of public land, of Indian lands, from depredations on public lands, sales of Government property, and furnishing transcripts of records and plats, amounted to \$2,277,995.18, an increase over the receipts for the preceding fiscal year of \$190,063.90. There was an increase of \$12,674.84 in the expenses of the district land offices as compared with the preceding year, this increase being principally due to the establishment of two new land offices in Alaska during the past year.

INCREASED SALES OF PUBLIC LANDS.—The total area of public lands, not including Indian lands, entered by individuals (i. e., exclusive of selections by corporations) during the year ending June 30, 1898, was 11,328,037.34 acres. This is in excess of the area so disposed of by the Government during the previous year by 2,607,893.96 acres, an increase of over 28 per cent.

The number of individual entries of Government land during the year was 89,674, as against 71,581 the previous year, showing an increase of over 25 per cent.

The cash receipts from such individual entries show a still greater increase, viz, \$2,125,218.60 received during the fiscal year 1898, as against \$1,570,243.49 received the previous year, an increase of \$554,975.11.

PATENTS ISSUED.—Patents were issued during the fiscal year for agricultural lands to the number of 30,293, containing approximately 4,846,880 acres. Of mineral and mill-site patents, 1,259 were issued, and 43 coal patents, embracing an area of 4,907.93 acres.

RAILROAD LAND PATENTS.—During the year there have been certified and patented on account of railroad grants 1,032,534.84 acres, as against an area patented during the preceding fiscal year of 5,101,969.31 acres, showing a decrease of 4,069,434.47 acres.

SWAMP-LAND PATENTS.—There were patented as swamp land in place 78,959.14 acres, and as swamp-land indemnity lands 2,153.82 acres, a total of 81,112.96 acres, a decrease of 720,838.57 acres from the amount patented during the preceding fiscal year.

School lands were selected and certified during the year to the amount of 459,112.66 acres, a decrease of 280,305.29 acres over the preceding fiscal year.

INDIAN AND MISCELLANEOUS PATENTS.—Patents of this class were issued during the year to the extent of 176,572.905 acres, a decrease of 323,731.465 acres over the preceding fiscal year.

PUBLIC SURVEYS.—The areas covered by surveys accepted by the General Land Office during the fiscal year ended June 30, 1898, are as follows:

State or Territory.	Acres.	State or Territory.	Acres.
Arizona	47, 836	North Dakota	888, 451
California	188, 977	Oregon	688, 915
Colorado.....	123, 667	South Dakota.....	877, 038
Florida	199	Utah	242, 279
Idaho.....	1, 148, 408	Washington	412, 768
Louisiana.....	1, 207	Wyoming.....	588, 008
Minnesota.....	486, 653	Total	6, 237, 871
Montana.....	454, 790		
New Mexico.....	155, 051		

By the act of Congress approved June 4, 1897 (30 Stat. L., 32), making appropriations for the sundry civil expenses of the Government for the fiscal year ending June 30, 1898, and for other purposes,

there was appropriated "for surveys and resurveys of public lands" the sum of \$325,000, of which amount not exceeding \$15,000 was authorized to be expended for resurveys, and an amount not exceeding \$40,000 for the cost of examinations in the field, etc.

Deducting the sums of \$15,000 and \$40,000 authorized to be used for resurveys and examinations, respectively, and the sum of \$10,000 reserved for emergencies, there remained available for apportionment among the several surveying districts the sum of \$260,000. The apportionment made to the several districts was as follows:

State or Territory.	Amount.	State or Territory.	Amount.
Arizona	\$5,000	South Dakota.....	\$4,000
California.....	20,000	Utah.....	20,000
Colorado.....	10,000	Washington.....	42,000
Idaho.....	32,000	Wyoming.....	25,000
Minnesota.....	5,000	Resurveys.....	15,000
Montana.....	42,000	Examinations.....	40,000
Nevada.....	5,000	Reserve.....	10,000
New Mexico.....	10,000	Total	325,000
North Dakota.....	20,000		
Oregon	20,000		

By the urgent deficiency act of January 28, 1898, authority was granted to use \$20,000 additional for examinations in the field, to be taken from the appropriation for 1898 for surveying the public lands.

THE BENSON SURVEYS.—In regard to these surveys the Commissioner reports that an agreement was entered into with the deputy surveyors whereby the latter were to return to the field and correct their surveys so as to be acceptable to the General Land Office. By the terms of this agreement July 1, 1898, was fixed as the time limit for the new surveys to be made, and corrected notes thereof filed with the United States surveyor-general of California. It also stated that under no circumstances should the date for the admission of the corrected notes be extended beyond December 1, 1898.

The office has received assurances from these deputies that the work of field correction is in progress; that the field notes of the work on each contract will be filed from time to time as fast as they can be prepared, and that the returns of all these suspended surveys will be in the hands of the surveyor-general of California in proper form before December 1, 1898.

The surveys in each contract will be examined immediately upon the reception by the surveyor-general of the corrected field notes. A competent and reliable surveyor, without prejudice or bias as between deputies and the Government, will be directed to proceed at once to the field and make a careful and thorough investigation of the surveys.

It is believed that the contemplated critical examination will enable the office to finally dispose of these vexatious and long-pending cases.

ENTRIES IN ALASKA.—One town-site entry and 15 non-mineral entries have been made in Alaska under the provisions of sections 11 to 14, act of March 3, 1891. The town-site entry (Juneau) and 1 non-mineral entry have been patented, while the others have been suspended for various reasons, such as illegal surveys, mineral character of the land involved, insufficiency of the proof submitted, etc.

The law in relation to non-mineral entries in Alaska has been modified by the provisions of section 10, act of May 14, 1898.

RAILROAD LANDS PATENTED.—During the fiscal year ended June 30, 1898, lands have been certified or patented on account of railroad grants as follows:

Name of railroad.	Where located.	Number of acres.
Alabama and Chattanooga.....	Alabama	100.44
Central Branch Union Pacific	Kansas	2,824.00
Central Branch (proper)	California	2,440.47
Do	Nevada	9,235.04
Do	Utah	100.00
Chicago, Rock Island and Pacific.....	Iowa	40.00
Central Pacific (successor to California and Oregon)	California	15,040.45
Union Pacific (successor to Denver Pacific).....	Colorado.....	49,171.74
Florida Central and Peninsular.....	Florida	2,952.61
Gulf and Ship Island	Mississippi	200.00
Union Pacific (successor to Kansas Pacific).....	Kansas	52,104.75
Do	Colorado.....	4,637.30
Chicago, Milwaukee and St. Paul.....	Iowa.....	120.00
Missouri, Kansas and Texas.....	Kansas	1,679.17
New Orleans Pacific	Louisiana.....	7,733.65
Northern Pacific.....	Minnesota	22,400.00
Do	North Dakota	4,207.13
Do	Montana.....	518,404.04
Do	Idaho.....	24,023.46
Do	Washington	20,714.00
Oregon and California	Oregon	57,815.04
Oregon and California (successor to Oregon Central)	do	72.75
St. Paul, Minneapolis and Manitoba (act of August 5, 1892).....	North Dakota	261.00
St. Paul and Northern Pacific.....	Minnesota	8,002.20
Sioux City and Pacific	Nebraska.....	80.00
Southern Pacific (main line)	California	9,702.85
Southern Pacific (branch line)	do	11,002.45
Union Pacific (proper).....	Nebraska.....	1,200.00
Do	Utah	44,200.13
Do	Wyoming	102,007.45
Do	Colorado.....	25,175.97
Wisconsin Central.....	Wisconsin	120.00
Total .....	.....	1,002,004.04

The above table shows a decrease of 4,069,434.47 acres from the area patented during the preceding fiscal year.

INCREASE IN MINERAL ENTRIES.—During the year there has been an increase in mineral entries of 389; also an increase of 174 patents issued, and 466 claims patented.

This increase in mineral entries indicates a marked revival of the mining industry, which had fallen to its lowest ebb in 1895, when but 757 entries were made, being less than one-half the number made in 1898, and the lowest since 1879.

The increase in mineral entries is found principally in the Cripple Creek mining district (Pueblo land district); in Clear Creek, Gilpin, and Boulder counties (Denver land district); in Lake, Summit, and Park counties (Leadville land district), all in Colorado; in the White-wood mining district, Lawrence County, S. Dak.; in Tooele, Juab, Salt Lake, and Summit counties, Utah; in the Colville Indian Reservation, Wash., and in Lincoln and Esmeralda counties, Nev.—the increase in these sections being 382 out of a total increase of 389; the Pueblo land district, in which Cripple Creek is situated, leading with an increase of 138.

From Colorado there was mined during the calendar year 1897 \$19,104,200 in gold and 21,636,400 ounces of silver, exceeding that of any other State in the Union.

The next State leading in gold mining was California, with \$14,618,300; Montana being second in the production of silver, with 15,667,900 ounces.

The third State in gold mining was South Dakota, with \$5,694,900; Utah being third in production of silver, with 6,265,600 ounces.

The fourth State in gold mining was Montana, with \$4,373,400; Idaho being fourth in the production of silver, with 4,901,200 ounces.

The four States leading in gold and silver production for the past two years are the following, with their respective amounts in both metals:

	Calendar year 1896.	Calendar year 1897.		Calendar year 1896.	Calendar year 1897.
Gold:			Silver (ounces):		
Colorado.....	\$14,911,000	\$19,104,200	Colorado.....	22,573,000	21,636,400
California	15,235,990	14,618,300	Montana.....	16,737,500	15,667,900
South Dakota.....	4,969,800	5,694,900	Utah	8,827,600	6,265,000
Montana.....	4,334,700	4,373,400	Idaho.....	5,149,900	4,901,200

THE RECLAMATION OF DESERT LANDS.

At the present time there are 579,368,274 acres of unappropriated and unreserved public lands in the United States, exclusive of Alaska. Of this area 546,549,655 acres, or more than 94 per cent, are in the 13 so-called desert-land States and Territories. Of the vacant lands in these States and Territories it is estimated that 332,176,000 acres are of a character that may be denominated "desert" under the law providing for the disposal of desert lands—that is, lands that do not produce native grasses in sufficient quantity to make an ordinary crop of hay in usual seasons, and lands which, without irrigation, do not

contain sufficient moisture to produce a natural growth of trees or make an agricultural crop of any kind in amount to make the cultivation thereof reasonably remunerative.

Undoubtedly a very large percentage of these lands do, at some season of the year, produce grasses and herbs of some value for grazing, but, with inconsiderable exceptions, are valueless for other purposes without irrigation.

The following table, prepared from the annual report of the United States Geological Survey for 1894-95, showing the relative area, by States and Territories, of the several classes of vacant lands in the desert land States and Territories, is presumed to represent the ratio between the grazing or desert lands and the total area of the now vacant lands in the several States and Territories:

States.	Total area.	Desert and grazing.	Barren irreclaimable wastes.	Woodland and forest.	Estimated water supply to reclaim.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Arizona	54,369,023	29,847,000	15,000,000	9,522,023	2,000,000
California	42,503,023	19,875,000	19,000,000	3,628,023	17,000,000
Colorado	39,708,551	27,808,000	.....	11,900,551	3,000,000
Idaho	44,207,949	17,475,000	.....	26,732,949	7,000,000
Montana	71,607,616	49,068,000	.....	22,539,616	11,000,000
Nevada	61,358,609	38,506,000	20,000,000	2,852,609	2,000,000
New Mexico.....	56,877,835	46,883,000	.....	9,994,835	4,000,000
North Dakota.....	20,574,613	20,402,000	.....	172,613	600,000
Oregon	35,897,869	17,067,000	.....	18,830,869	3,000,000
South Dakota	12,982,826	12,073,000	.....	909,826	1,000,000
Utah	43,937,896	16,319,000	10,000,000	17,618,896	4,000,000
Washington.....	13,442,582	3,847,000	.....	9,595,582	3,000,000
Wyoming	49,081,263	33,006,000	5,000,000	11,075,263	9,000,000
Total.....	546,549,655	332,176,000	69,000,000	145,373,655	71,500,000

Of the three hundred and odd million acres of desert lands requiring irrigation to render them valuable farming lands, the available water supply is sufficient for but 71,500,000 acres, thus leaving an estimated area of 260,676,000 acres suitable only for grazing purposes.

The percentage of lands that can or will be so entered is of course a mere matter of conjecture, ultimately depending upon a consideration of their proximity to irrigable lands, and the individual preference of the entryman. It is known, however, that the most valuable of these lands are being selected by the States under their several grants for educational and other purposes; and while, of course, some part of the available water supply will be used in the irrigation of these State lands, by far the greater portion will remain in their natural condition and will be utilized for grazing purposes.

It will be noticed that the Director of the Geological Survey reports that there are 71,500,000 acres of irrigable land for which water is available; attention is especially called to the report of the Commissioner of the General Land Office, in which this subject is thoroughly treated.

PROTECTION OF PUBLIC LANDS.—Eight hundred and eighty-eight cases were referred to special agents for investigation. Hearings were ordered in 120 cases, 741 cases were held for cancellation, 789 canceled, and 298 examined and passed. Final action was taken in 1,264 cases, and there were pending on June 30, 1898, 2,051 cases.

COMPULSORY ATTENDANCE OF WITNESSES.—The recommendations made by the General Land Office in previous years for needed legislation compelling the attendance of witnesses at hearings, ordered on special agents' reports before the local land officers, are renewed this year, and I urgently invite attention to the importance of such legislation.

THE PUBLIC FORESTS.

FOREST RESERVATIONS.—On March 1, 1898, the lands embraced in the eleven forest reservations which were suspended by the act of June 4, 1897 (30 Stat., 34–36), again became subject to the operation of the proclamations of February 22, 1897, creating them, which added an estimated amount of 19,951,360 acres to the area embraced in the reserves previously created. In addition to this, two new reserves were created during the year—the Pine Mountain and Zaca Lake Reserve in California, embracing an area of 1,644,594 acres, and the Prescott Reserve in Arizona, embracing 10,240 acres; and the boundaries of the Pecos River Reserve in New Mexico have been changed and enlarged to include 120,000 additional acres.

There were, consequently, at the close of the year 30 forest reservations (exclusive of the Afognac Forest and Fish-Culture Reserve in Alaska), created by Presidential proclamation under section 24 of the act of March 3, 1891 (26 Stat., 1095), embracing an estimated area of 40,719,474 acres, as follows:

States and Territories.	Name of reservations.	Dates of proclamations creating reservations.	Estimated areas.
			<i>Acres.</i>
Arizona.....	Grand Canyon Forest Reserve.....	Feb. 20, 1893	1, 851, 520
	The Prescott Forest Reserve.....	May 10, 1898	10, 240
California.....	San Gabriel Timber-Land Reserve.....	Dec. 20, 1892	555, 520
	Sierra Forest Reserve.....	Feb. 14, 1893	4, 096, 000
	San Bernardino Forest Reserve.....	Feb. 25, 1893	737, 280
	Trabuco Canyon Forest Reserve.....	do.....	49, 920
	The Stanislaus Forest Reserve.....	Feb. 22, 1897	691, 200
	The San Jacinto Forest Reserve.....	do.....	737, 280
	The Pine Mountain and Zaca Lake Forest Reserve..	{ Mar. 2, 1898 June 29, 1898 }	1, 644, 594
Colorado.....	White River Plateau Timber Land Reserve.....	Oct. 16, 1891	1, 198, 080
	Pikes Peak Timber Land Reserve.....	{ Feb. 11, 1892 Mar. 18, 1892 }	184, 320
	Plum Creek Timber Land Reserve.....	June 23, 1892	179, 200
	The South Platte Forest Reserve.....	Dec. 9, 1892	683, 520
	Battlement Mesa Forest Reserve.....	Dec. 24, 1892	858, 240
Idaho and Montana	The Bitter Root Forest Reserve.....	Feb. 22, 1897	4, 147, 200

States and Territories.	Name of reservations.	Dates of proclamations creating reservations.	Estimated area.
			<i>Acres.</i>
Idaho and Washington.	The Priest River Forest Reserve.....	Feb. 22, 1897	645, 120
Montana.....	The Flathead Forest Reserve	Feb. 22, 1897	1, 382, 000
	The Lewis and Clarke Forest Reserve.....	.....do	2, 928, 000
New Mexico.....	The Pecos River Forest Reserve.....	{ Jan. 11, 1892 May 27, 1898 }	431, 040
Oregon	Bull Run Timber Land Reserve	June 17, 1892	142, 000
	The Cascade Range Forest Reserve	Sept. 28, 1893	4, 492, 000
	Ashland Forest Reserve.....	.....do	18, 500
South Dakota.....	The Black Hills Forest Reserve.....	Feb. 22, 1897	907, 000
Utah	The Uintah Forest Reserve	Feb. 22, 1897	875, 520
Washington	The Washington Forest Reserve.....	.....do	2, 804, 240
	The Olympic Forest Reserve .....	.....do	2, 188, 000
	The Mount Rainier Forest Reserve. (Includes the Pacific Forest Reserve, created Feb. 20, 1893, embracing an area of 967, 680 acres.)	.....do	2, 234, 000
Wyoming	Yellowstone National Park Timber Land Reserve ..	{ Mar. 30, 1891 Sept. 10, 1891 }	1, 220, 040
	The Big Horn Forest Reserve	Feb. 22, 1897	1, 127, 000
	The Teton Forest Reserve.....	.....do	820, 440

The efforts of the past year have been primarily directed to putting into operation the act passed on June 4, 1897 (30 Stat. L., 34-36), providing for the administration of forest reserves, and the regulations thereunder by this Department. The lack, however, of sufficient appropriations in 1897 retarded the work and rendered it impracticable to attempt to inaugurate a system of administration in any wise commensurate with the needs of the reservations during that year.

FOREST FIRES.—As far as it was found possible to undertake the work with the limited force at command, the patrolling of the reserves has shown that the subject of forest fires is the foremost one demanding attention, fire being the one paramount danger to which the reserves are exposed.

SHEEP GRAZING.—Next to fires, sheep grazing was found to constitute the most serious difficulty to be considered in administering certain of the reserves. Appreciating that these great bodies of reserved lands should not be entirely withdrawn from occupation and use in connection with so large and important an industry as sheep raising, special efforts have been directed toward ascertaining the particular regions in which the conditions are such as to demand the exclusion of sheep, and toward acquiring the information necessary to a determination as to the nature of the restrictions required to regulate sheep grazing in other regions.

SALES OF TIMBER WITHIN RESERVATIONS.—So far it has not been possible to practically enter upon the work of conducting sales of timber, as provided for in the act of June 4, 1897. The subject demands,

however, immediate attention as a leading feature of forest administration, and as such is now receiving careful consideration with a view to inaugurating a rational system of timber cutting, which, while keeping in view the improvements for forest products, will supply local demands for the latter, and at the same time yield a fair return in money to the Government. The work is one which will require, to a certain extent, experience and training on the part of forest officers, since otherwise the forests may suffer seriously as the result of the operations.

THE INAUGURATION OF A FOREST SYSTEM.—Since the close of the fiscal year the increased appropriations which became available on the first of July, 1898, have admitted of a considerable expansion of the service, enabling the Department to inaugurate a forest system by placing a graded force of officers in control of the reserves. Although this service was not in full operation until the latter part of August, 1898, the good results thereof have already been felt in many sections, demonstrating the wisdom of Congress in providing increased appropriations for the protection of the public timber.

The reports received from the forest officers in charge of a number of the reserves indicate that the patrolling of the reservations by forest rangers has not only prevented destructive fires from gaining headway, but has lessened, to a marked degree, the number of fires this season.

Full and specific instructions have recently been given the forest officers to prepare detailed reports on fires, the subject of sheep grazing, proposed sales of public timber, the examination of forested areas of proposed reservations, exclusion of timber trespassers and other intruders, and methods of patrolling the reserves, with a view of affording the Government intelligent information upon which to act in administering the reservations.

While public timber has been the subject of extensive legislation for nearly a century, great advancement toward a comprehensive administration of the public forests has been made during the past eighteen months. A definite forestry policy having been fully inaugurated, it is desirable that in the matter of appropriations requisite to insure the further development of the system a generous policy be followed by Congress.

This report is applicable only to the forest reservations set aside by Presidential proclamation under section 24 of the act of March 3, 1891 (26 Stat. L., 1095). As stated, great good has been accomplished during the brief time that the forest policy inaugurated has been in force, in preventing destructive fires in such reserves, but the vast forest domain outside of such reservations has been visited during the past summer as usual by destructive fires which, under the existing appropriations, the Department could not provide means to control. Some legislation regarding the care of these forests is desirable.

CHANGE IN PUBLIC OPINION.—A better understanding of the purposes of forest reservation has led the people in the localities directly

affected to take a deep and approving interest in the matter. Public sentiment has in the past year undergone a marked change in respect thereto, and opposition to forest reserves is rapidly subsiding.

NEED FOR ADDITIONAL LEGISLATION RESPECTING RESERVATIONS.—It is gratifying to record that the law of June 4, 1897, under which the reserves are administered, and the regulations thereunder, have, thus far, practically met every requirement and demand that has been made from every source and interest with but three exceptions, which are as follows: First, the provision therein for the relinquishment of private holdings within reservations and the selection of unreserved lands in lieu thereof, requires to be modified somewhat; second, no provision appears to be made in the law for the entry of coal lands within reserves where claims have not been initiated prior to the creation of the reserves; third, there is no provision therein for the leasing or renting of lands within the reserves for sanitarium or other purposes in connection with mineral or other springs.

I concur in the recommendations submitted by the Commissioner of the General Land Office for additional legislation on these three points.

TIMBER ON UNRESERVED LANDS.—The work of protecting and regulating the use of timber on the unreserved lands has comprised three branches, viz, the issuing of permits to cut timber free of cost, sales of timber, and the prevention of depredations upon timber.

TIMBER PERMITS AND SALES OF TIMBER.—The number of applications received during the year for permits to cut public timber, under the act of March 3, 1891 (26 Stat., 1093), amounted to 36, including 13 applications for renewal of privilege, being a decrease of 60 applications from the preceding year. During the year 12 permits were issued and 79 applications were rejected.

The decrease in applications for permits to cut public timber resulted from a change of policy in the administration of said act of March 3, 1891, which went into effect on the 1st of April last, whereby the practice of issuing permits to cut public timber free of cost for purposes of sale and traffic was abolished. The practical operation of said act, as heretofore administered, having shown the want of wisdom in placing public timber in large quantities at the disposal of mill men and others without providing adequate compensation to the Government therefor, the revised regulations, which were approved by me March 17, 1898, were shaped with a view to bringing them into a line with the policy which had been recently adopted by Congress in the act of June 4, 1897 (30 Stat. L., 34–36), providing for the use of timber within forest reservations, and which was again followed in the act of May 14, 1898 (30 Stat. L., 409), relating to timber in Alaska.

These revised regulations restrict the taking of timber thereunder, free of charge, to use by settlers and others on their own claims or farms, and limit the quantity to an amount not to exceed \$100 within any

one year; while, in order to meet all legitimate needs of trade, further provision is made for securing timber thereunder, to a reasonable extent, for purposes of traffic and sale, upon payment for same upon a basis of competition after appraisement by the Government.

NEED FOR AMENDED LEGISLATION RESPECTING TIMBER ON UNRESERVED LANDS.—In connection with the regulations of March 17, 1898, providing for sales of timber, I heartily agree in the remarks of the Commissioner of the General Land Office pointing out the bad effects of present legislation concerning the use of timber on unreserved lands, and concur in his recommendations for amended legislation on this point.

DEPREDACTIONS UPON PUBLIC TIMBER.—Three hundred and fifty-five cases of trespasses were reported during the year, involving public timber and the products therefrom to the value of \$626,182.41 recoverable to the Government.

The amount involved in propositions of settlement accepted and compromises effected under section 3469, Revised Statutes, and sales of timber and lumber, is \$23,481.77, and the amount involved in fines imposed and judgments rendered is \$120,762.73, being largely in excess of the expenditure for this branch of the service.

On the 30th of June, 1898, there were pending in the courts 140 civil suits for the recovery of \$3,224,327.36 for the value of timber alleged to have been unlawfully cut from public lands, and 412 criminal prosecutions for the cutting and removing timber in violation of law.

UNION PACIFIC RAILROAD LANDS.—On June 15, 1897, the Commissioner of the General Land Office was directed to submit for approval only such lists of lands, within the limits of the Union Pacific grant, as had been shown to his satisfaction to have been sold by said company for a valuable consideration to actual purchasers prior to the date of default by said company on its bonded indebtedness to the Government.

On February 11, 1898, this Department was advised that the indebtedness of said company to the Government, amounting to \$58,448,223.75, had been fully paid by the reorganization committee, and February 12, 1898, the Commissioner of the General Land Office was advised that the restrictions imposed by the order of June 15, 1897, were removed as to the Union Pacific Railroad lands between Omaha, Nebr., and Ogden, Utah, and that as to such lands he should submit, in the ordinary course of business, for consideration, such lists as the company might from time to time present.

DES MOINES RIVER LAND CLAIMS.

DES MOINES RIVER LANDS.—Congress, by act approved August 8, 1846, granted "certain lands to the Territory of Iowa, to aid in the improvement of the navigation of the Des Moines River in said Terri-

tory." Much of that land had been settled upon under the homestead preemption, and other public-land laws, and Congress, by joint resolution approved March 2, 1861, endeavored to quiet the title to said lands.

The sundry civil act approved August 18, 1894 (28 Stat. L., 372, 396, 397), appropriated \$200,000 to be expended by the Secretary of the Interior in the adjustment of the claims of settlers on the so-called Des Moines River lands in the State of Iowa, and also authorized the appointment of a special commissioner to investigate, hear, and determine the claims of all settlers, their heirs or assigns. The special commissioner appointed in pursuance of such authority to investigate the claims of said settlers made report thereof on the 1st day of May, 1896. Such report is embodied in Senate Document No. 258, Fifty-fourth Congress, first session. It shows that the amount of awards made by the commissioner to settlers and claimants on said Des Moines River lands aggregated \$183,854.07. Of that sum claims have been allowed and paid to the amount of \$178,620.29. Only two claims remain unpaid, and one of these is partly paid and the other represents \$5,000. Said unpaid claims await the completion of certain formalities required of the claimants to complete payment in full.

A further appropriation of about \$40,000 was made by the sundry civil bill approved July 1, 1898, to pay a certain class of these claims, the payment of which was not authorized by the act of August 18, 1894, as follows:

DES MOINES RIVER LAND SETTLERS.—To enable the Secretary of the Interior to expend any balance of money appropriated under the act of August eighteenth, eighteen hundred and ninety-four, remaining unexpended, which sum is hereby reappropriated to pay such sums as may be found due to duly qualified settlers who have in good faith filed preemption or homestead claims, made settlement, resided upon for a period of not less than five years, unless sooner evicted, cultivated and made valuable improvements on the land claimed, and in cases where such persons made actual settlement in good faith under the preemption and homestead laws, at a time when others were permitted to file on like lands and in good faith resided upon the same for a period of not less than five years, unless sooner evicted, cultivated and made valuable improvements upon the lands so occupied, and duly offered to file for the land settled upon within the time prescribed by law, but were not permitted to do so by the officers of the Land Department, and did not abandon said lands or procure title to other public lands under any law of the United States, and the further sum of twenty-five thousand dollars is hereby appropriated to enable the Secretary to make such payments: *Provided*, That no part of the aforesaid sums shall be paid until the Secretary of the Interior shall find and determine, upon the evidence heretofore taken by the special commissioner appointed under said act of August eighteenth, eighteen hundred and ninety-four, and upon such other and further evidence as he may in his discretion take, all of which shall be preserved in his office, what sum, if anything, is justly due such persons, their heirs and assigns, and the measure of damages shall be in all respects as was provided for claims under said act of August eighteenth, eighteen hundred and ninety-four, and of the foregoing sums two thousand dollars, or so much thereof as may be necessary, may be expended in making such further examination: *Provided further*, That no claim of any preemptor or homesteader shall be considered or allowed except upon proof of settlement, residence, and improvements, as herein required: *Provided further*, That nothing herein shall be construed as authorizing the reopening or further consid-

tion of any claim reported in lists A and B of the special commissioner's report as the same appears in Senate Document Numbered Two hundred and fifty-eight, Fifty-fourth Congress, first session.

Under the authority conferred by the first proviso of the paragraph above quoted, Hon. John L. Stevens, of Boone, Iowa, was appointed as a special commissioner to take such other and further evidence and make such other and further examination as may be required for the adjudication of the class of claims mentioned, and he is now engaged upon that work.

OFFICE OF THE ASSISTANT ATTORNEY-GENERAL.

The force in the office of the Assistant Attorney-General is occupied mainly with matters arising under the land laws of the United States, notwithstanding the repeal of the preemption and timber-culture laws, many questions arising upon claims initiated under those laws before their repeal are continually presented for decision. During the eleven months covered by this report decisions were prepared in 1,096 contested cases, as against 951 for the twelve preceding months. The number of motions for review has materially decreased, 355 such motions having been disposed of during the past eleven months, as against 376 for the twelve preceding months.

Questions requiring the consideration of the law force are not confined to appeals in contested cases, but extend over a large amount of miscellaneous work, such as petitions for certiorari, adjustments of railroad grants, applications for survey, matters pertaining to Alaska, etc. One hundred and ninety-two matters of this character have been disposed of, while hundreds of letters have been written to parties and their attorneys relative to the status and procedure of cases before the Department. This office is also frequently called upon for written opinions upon matters pending or arising in the Indian, Pension, Patent, and other bureaus of the Department. The preparation of these opinions requires much labor and research and involves a high degree of responsibility.

During a portion of the year one of the assistant attorneys has been absent on detail, another has been acting as chief of the division having in charge the affairs of the Indian Territory, and the detail to this office of one assistant attorney from the Board of Pension Appeals has been discontinued. To this extent the working force in the office has been reduced.

Two volumes of 614 and 736 pages, respectively, containing departmental decisions involving leading and important principles of law or practice, have been published. It would be difficult to overestimate the advantage accruing to the assistant attorneys of the office and to attorneys practicing before the Department, the General Land Office, and the local offices by having such decisions in printed form for pur-

poses of reference. They are also frequently cited and quoted from by the courts.

By act of July 7, 1898 (30 Stat., 671), provision was made for increasing the force by the addition of three assistant attorneys and one stenographer and typewriter. A continuance of this additional force is absolutely necessary to the proper transaction of the business of the office.

INDIAN AFFAIRS.

The office of Commissioner of Indian Affairs was created on July 9, 1832, and placed under the direction of the Secretary of War. Upon the passage of the act of 1849 establishing the Department of the Interior, the Indian Bureau was transferred to this Department.

The progress of the Indians during the past year, in civilization as well as education, has been gradual, though substantial. There has been but one disturbance or outbreak of a serious character, and that was among the Chippewa Indians of Minnesota. It was of very recent occurrence, however, and happily has been suppressed.

The population of the Indians, exclusive of those in the State of New York and of those in the Five Civilized Tribes, may be stated to be, approximately, 180,132; that of the New York Indians, 5,318, and of the Five Civilized Tribes, including 17,457 freedmen, as 77,018.

The policy heretofore inaugurated of extending to the Indians every facility tending to make them an independent and self-supporting class has been continued. The acceptance by many Indians of the opportunities thus presented to put themselves in a position to acquire a knowledge of farming, the trades, and other useful occupations, by means of which they can compete with the white man, has proved the wisdom of such course.

During the year there were employed 1,512 Indians in the agency service proper as herders, teamsters, harness makers, clerks, shoemakers, butchers, blacksmiths, and kindred occupations, to whom were aid salaries aggregating \$286,215; and in the Indian school service there were employed 1,158 for the work of nurses, matrons, clerks, cooks, bakers, laundresses, industrial and other teachers usually as assistants but occasionally at the head of the respective departments, receiving salaries ranging from \$36 to \$900 per annum, and aggregating \$277,562.

Since the passage of the act of February 8, 1887, 55,467 allotments have been made to Indians, embracing an acreage of 6,708,628 acres.

Every encouragement has been extended the Indians to go upon these allotments and work the same.

Under a clause in the several Indian appropriation bills which have been enacted from time to time by Congress, the President is authorized to detail officers of the United States Army to act as Indian agents at such agencies as, in his opinion, may require the presence of

an army officer. Pursuant to such authority, a number of officers have from time to time been detailed to act as Indian agents, and were serving in such capacity at the time of the outbreak of the recent war with Spain.

Owing to the necessities of the service and the immediate requirements of the War Department, the officers hereinafter named of the Regular Army who had been in the service of this Department as acting Indian agents have been recalled to their respective regiments, to wit:

Lient. Sedgwick Rice, San Carlos Agency, Ariz.
 Capt. William E. Dougherty, Hoopa Valley Agency, Cal.
 Lient. Francis G. Irwin, jr., Fort Hall Agency, Idaho.
 Capt. George W. H. Stouch, Blackfeet Agency, Mont.
 Capt. Charles L. Cooper, Pueblo and Jicarilla Agency, N. Mex.
 Lient. Victor E. Stottler, Mescalero Agency, N. Mex.
 Maj. Constant Williams, Navajo Agency, N. Mex.
 Capt. Frank D. Baldwin, Kiowa Agency, Okla.
 Lient. Col. Henry B. Freeman, Osage Agency, Okla.
 Capt. George A. Cornish, Uintah and Ouray Agency, Utah.
 Capt. George L. Scott, La Pointe Agency, Wis.

The Department has regretted to lose these officers, but great care has been exercised in the selection of their civilian successors, and the present Indian agents are, generally, of a high character, and are proving to be very competent in the execution of their trusts.

The following officers of the Army are still connected with the Department in the capacity of acting Indian agents, to wit:

Capt. William A. Mercer, Omaha and Winnebago Agency, Nebr.
 Maj. William H. Clapp, Pine Ridge Agency, S. Dak.
 Maj. Albert E. Woodson, Cheyenne and Arapahoe Agency, Okla.
 Capt. Henry P. Ritzens, San Carlos Agency, Ariz.

APPROPRIATIONS.—The appropriations for the current and contingent expenses of the Indian department and fulfilling treaty stipulations with the various tribes, and for certain special purposes incident to the Indian service, for the fiscal year ending June 30, 1899, aggregate \$7,653,854.90, an apparent increase of \$222,234.01 over those of 1898.

The items of difference between the appropriations for 1898 and those for 1899 are as follows:

Increase:

Current and contingent expenses.....	\$42,800.00
Fulfilling treaty stipulations.....	126,528.16
Support of schools	6,618.65
Miscellaneous.....	55,187.20
Total increase	231,134.01

Decrease:

Miscellaneous gratuities	8,900.00
Net increase	222,234.01

Included in the appropriations for the present year and going to make up a part of this increase are certain unusual items for special but obviously necessary purposes, as follows:

Commission to Five Civilized Tribes.....	\$43,400
Telephone line, White Earth Agency	1,000
Commission, Crow and other Indians.....	15,000
Resurveying boundaries, Klamath Reservation.....	10,000
Negotiating with Klamath Indians	2,000
Commission, Puyallup Reservation	2,000
Surveying Cheyenne River and Standing Rock reservations.....	23,000
Counsel for Pueblo Indians.....	2,000
Indian exhibit, Omaha Exposition	40,000
Total	138,400

In addition to these appropriations, which are all embraced in the Indian appropriation bill, items were contained in the deficiency bill for 1898, made necessary by increased advertising, higher rates for transportation, and the insufficiency of the appropriation for traveling expenses of Indian inspectors, as follows:

Expenses of purchasing goods and supplies, advertising, etc	\$5,000
Traveling expenses of Indian inspectors	2,000
Transportation of Indian supplies.....	75,000
Total	82,000

The estimates submitted to Congress by the Department for the Indian service for 1899 aggregated \$7,375,617.08. The total amount appropriated was \$7,653,854.90, an excess over the estimates of \$278,237.82.

The objects of the appropriations for 1898 and 1899 are as follows:

For—	1898.	1899.
Current and contingent expenses.....	\$740,040.00	\$782,840.00
Fulfilling treaty stipulations.....	3,123,871.74	3,250,300.00
Miscellaneous support, gratuities.....	673,025.00	684,125.00
Incidental expenses	80,000.00	80,000.00
Support of schools.....	2,631,771.35	2,630,300.00
Miscellaneous	182,912.80	228,100.00
Total	7,431,620.89	7,653,854.00

The following table shows the income of the various Indian tribes, from all sources, for the fiscal year ended June 30, 1898:

Tribes.	Interest on trust funds. (a)	Treaty and agreement obligations. (b)	Gratuities. (c)	Indian moneys, proceeds of labor and miscellaneous. (d)	Total.
Apaches, Kiowas, and Comanches		\$46,700.00		\$111,562.57	\$158,262.57
Apaches, Kiowas, Comanches, and Wichitas			\$100,000.00	1,491.01	101,491.01
Cheyennes and Arapahoes	\$50,000.00	36,000.00	90,000.00	60.32	176,060.32
Cherokees	137,869.17			3,221.45	141,090.62
Chippewas and Christian Indians	2,128.02				2,128.02
Chippewas of the Mississippi		5,000.00			5,000.00
Chippewas in Minnesota		215,559.00		7,014.49	222,573.49
Chickasaws	60,334.78	3,000.00		1,523.42	64,858.20
Chippewas of Lake Superior			7,125.00	48,445.14	55,570.14
Chippewas of Red Lake and Pembina			10,000.00		10,000.00
Chippewas, Turtle Mountain Band			13,000.00		13,000.00
Chippewas on White Earth Reservation			10,000.00		10,000.00
Choctaws	29,250.06	30,032.89		4,570.21	63,853.16
Cœur d'Alenes		11,500.00			11,500.00
Columbias and Colvilles		7,000.00		346.09	7,346.09
Creeks	90,000.00	49,968.40		2,491.65	142,460.05
Crow Creek Sioux	6,783.40			259.31	6,992.71
Crows	12,886.49	78,000.00		25,491.40	116,377.89
Confederated tribes and bands in middle Oregon			6,000.00		6,000.00
Digger Indians			3,900.00		3,900.00
D'Wamish and other allied tribes in Washington			7,000.00		7,000.00
Eastern Shawnees		1,030.00			1,030.00
Fort Hall Indians	4,357.31	16,000.00	30,000.00	277.50	50,634.81
Flatheads and other confederated tribes			10,000.00	316.50	10,316.50
Flatheads, Carlos's Band			10,000.00		10,000.00
Hualapais in Arizona			7,500.00		7,500.00
Indians in Arizona and New Mexico			225,000.00	3,719.74	228,719.74
Indians at Blackfeet Agency		150,000.00		88.35	150,088.35
Indians at Fort Belknap Agency		115,000.00		113.00	115,113.00
Indians at Fort Berthold Agency		80,000.00		38.00	80,038.00
Indians in California			21,000.00	1,583.30	22,583.30
Indians at Fort Peck Agency		165,000.00		143.82	165,143.82
Indians of Klamath Agency			5,000.00		5,000.00
Indians in Washington			14,000.00	11.75	14,011.75
Indians of Lemhi Agency			13,000.00	19.70	13,019.70
Indians in Nevada			16,000.00	120.00	16,120.00
Indians in Oregon			12,000.00	196.75	12,196.75
Iowas (Kansas)	\$5,525.36	2,875.00			8,400.36
Iowas in Oklahoma	3,051.80	3,000.00			6,051.80

Tribes.	Interest on trust funds. (a)	Treaty and agree- ment obliga- tions. (b)	Gratui- ties. (c)	Indian moneys, proceeds of labor and miscella- neous. (d)	Total.
Kansas.....	2,686.17	6,750.00	2,500.00	5,296.80	17,232.97
Kickapoos (Kansas).....	5,190.31	4,087.83	.....	6,206.44	15,483.58
Kickapoos (Oklahoma).....	1,772.18	.....	5,000.00	.....	6,772.18
L'Anse and Vieux de Sert Chip- pewas.....	1,000.00	.....	.....	.....	1,000.00
Makahs.....	.....	.....	4,000.00	.....	4,000.00
Menomonees.....	44,655.38	41,466.73	.....	3,351.34	89,473.45
Mission Indians.....	.....	.....	10,000.00	260.80	10,260.80
Modocs, in Indian Territory.....	.....	.....	4,000.00	.....	4,000.00
Molels.....	.....	3,000.00	.....	.....	3,000.00
Nez Percés (Idaho).....	30,859.58	6,000.00	5,000.00	.....	41,859.58
Nez Percés of Joseph's Band.....	.....	.....	7,500.00	.....	7,500.00
Northern Cheyennes and Arapahoes.....	.....	111,000.00	.....	.....	111,000.00
Omahas.....	17,489.65	9,869.23	.....	14,462.38	41,821.26
Osages.....	418,559.64	3,456.00	.....	21,028.59	443,044.23
Otoes and Missourias.....	83,471.01	.....	.....	4,837.43	87,808.44
Pawnees.....	20,770.49	47,100.00	.....	313.50	68,183.99
Poncas.....	3,500.00	.....	15,000.00	6,860.90	25,360.90
Pottawatomies (Kansas).....	9,204.72	20,647.65	.....	616.61	30,468.98
Puyallup Indians.....	908.82	.....	.....	348.00	1,256.82
Quapaws.....	.....	1,500.00	.....	427.41	1,927.41
Quinaltals and Quillehutes.....	.....	.....	3,000.00	.....	3,000.00
Round Valley Indians.....	115.60	.....	.....	.....	115.60
Sacs and Foxes of the Mississippi.....	15,608.24	51,000.00	.....	100.00	66,708.24
Sacs and Foxes of the Mississippi in Iowa.....	1,930.20	.....	.....	32.45	1,962.65
Sacs and Foxes of the Missouri....	1,082.96	8,070.00	.....	362.82	9,515.78
Seminoles (Indian Territory).....	75,000.00	28,500.00	.....	288.00	103,788.00
Seminoles in Florida.....	.....	.....	6,000.00	5.50	6,005.50
Senecas.....	2,048.98	3,690.00	.....	.....	5,738.98
Senecas, Tonawanda band.....	4,347.50	.....	.....	.....	4,347.50
Senecas and Shawnees.....	757.02	.....	.....	.....	757.02
Senecas of New York.....	.....	\$11,902.50	.....	.....	11,902.50
Shoshones and Arapahoes in Wyoming.....	.....	10,000.00	.....	1,802.64	11,802.64
Shoshones in Nevada.....	.....	.....	10,000.00	275.00	10,275.00
Shoshones in Wyoming.....	.....	16,000.00	20,000.00	.....	36,000.00
Sioux, Yankton tribe.....	24,000.00	50,000.00	.....	.....	74,000.00
Sioux of Devils Lake.....	.....	.....	10,000.00	43.00	10,043.00
Sioux of different tribes.....	150,000.00	1,507,000.00	.....	750.56	1,657,750.56
Sioux, Medawakanton band.....	.....	.....	5,000.00	.....	5,000.00
Sisseton and Wahpeton Indians...	56,250.00	18,400.00	.....	101.25	74,751.25
Six Nations of New York.....	.....	4,500.00	.....	.....	4,500.00
Siletz Indians.....	5,820.49	.....	.....	225.85	6,046.34
Spokanes.....	.....	7,200.00	.....	.....	7,200.00
Sklallams.....	.....	.....	1,500.00	.....	1,500.00
Stockbridges.....	3,799.42	.....	.....	.....	3,799.42
Tonkawas.....	1,286.24	.....	4,000.00	.....	5,286.24

Tribes.	Interest on trust funds. (a)	Contract and agency trust funds. (b)	Stipend- funds. (c)	Indian trust funds, trust and miscellaneous funds. (d)	Total.
Utes, confederated bands of.....	\$75,377.10	\$63,741.10	\$2,800.00	\$18,573.15	\$159,491.35
Walla Walla, Cayuse, and Umatilla tribes	\$4,735.25	.....	7,800.00	\$42.02	\$12,577.27
Winnebagoes .....	.....	\$4,312.47	.....	\$124.75	\$4,437.22
Yakimas .....	.....	.....	\$,800.00	\$0.00	\$,800.00
Total	\$80,112.35	\$68,053.57	\$28,600.00	\$18,617.92	\$185,383.84
Grand total .....	.....	.....	.....	.....	\$203,773,986.34

a Interest on uninvested funds held in trust by the Government, under the provisions of the act of April 1, 1880 (21 Stat., 79), and other acts of Congress. Paid in cash, as provided by law, to the proper officers of the Five Civilized Tribes and to such other Indians as may be entitled to be paid in such manner, or expended, under the supervision of the Department, for the support, education, and civilization of the respective Indian tribes.

b Appropriated by Congress annually, under treaty stipulations, subject to changes by limitation of treaties. Expended under the supervision of the Department for the support, etc., of the Indians, or paid in cash, as provided by treaty.

c Donated by Congress for the necessary support of Indians living in treaties, or those whose treaties have expired, or whose funds arising from existing treaties are inadequate. Expended under the supervision of the Department.

d Proceeds of leasing of tribal lands for grazing and farming purposes and results of Indian labor. Moneys collected through Indian agents, and expended under the direction of the Department for the benefit of the Indians or paid to them in cash per capita.

e Umatilla tribe only.

f In addition to this, a large income, amounting in the aggregate to a million and a half dollars, is received by individual Indians from sales of beef cattle and various products to the Government, the freighting of Indian supplies, the sales of products to private persons, and from the leasing or working on shares of allotted lands.

Hereto appended (Exhibit A) will be found a statement showing all Indian reservations, how established, the area of unallotted lands in each, in acres and square miles, as well as the acreage of the lands that have been allotted or otherwise disposed of.

EDUCATION.—The school statistics of the year show a highly satisfactory condition of the educational interests of the Indians, marked progress having been made in all the schools throughout the country. There have been added to the pupils enrolled in the Government schools 1,296, nearly 7 per cent, and the average attendance has been increased 1,289, nearly 9 per cent. The total number of Indian youth (exclusive of the New York Indians and those of the Five Civilized Tribes) enrolled in all schools, both Government, public, mission and contract, was 24,325, with an average attendance of nearly 82 per cent, as against an enrollment of 22,964 in 1897.

The Government Indian school system now embraces 100 boarding schools—25 off and 75 on reservations—which cared for 15,052 pupils, and 4,847 were enrolled in 142 day schools, 2,999 pupils were provided for in 34 contract schools, and the remainder in public and mission schools. There have been established during the year 5 new boarding schools and 8 day schools; 9 schools have been discontinued because better facilities have been otherwise provided. The quarterly reports of issues and expenditures on account of all Indian schools show that

the total cost thereof to the Government during the fiscal year ended June 30, 1898, was \$2,345,947.88.

The schools of the New York Indians and Indians composing the Five Civilized Tribes in the Indian Territory are not under the supervision of this Department; but as a matter of information it may be stated that there are 31 schools among the New York Indians, at which there is an attendance of 1,059 pupils, and among the Five Civilized Tribes approximately 373* schools, with an attendance of 10,476* children.

Special effort has been made to compel attendance at reservation schools, and the Commissioner recommends that the law be changed so as to empower the Indian Office to transfer advanced pupils from reservation to nonreservation schools without the consent of parents or guardians when the highest good of the pupils demands it.

The time has arrived when it is fair to begin to look for tangible results from the educational work which has been going on for a school generation, and agents have been asked to report as to the conduct and physical condition of returned students. The replies are unexpectedly gratifying, in that they show that 73 per cent have made a good record since leaving school; 3 per cent have done excellently; while only 24 per cent have turned out badly. The health returns are quite as good, 89 per cent being reported in good physical condition.

Congress at its last session provided that the amount allowed contract schools during the current year should be 25 per cent less than last year, which leaves \$119,644.50 to be so applied; \$23,125 have also been allowed from tribal funds to three contract schools among the Osages and Pottawatomies. Most of the schools carry a larger number of pupils than are called for in their contracts.

A few schools carried on by missionary societies without Government aid make no report to the Indian Office, and their attendance is not known.

Special attention has been given to the improvement of school plants, particularly in regard to heating, lighting, sewerage, and fire protection, and the ornamentation of buildings and grounds has not been neglected.

Additional buildings furnished the following schools have greatly increased their efficiency and comfort, and in several cases their capacity also: Fort Sill, Riverside, Rainy Mountain, and Arapaho, Okla.; Cherokee, N. C.; Flandreau, S. Dak.; Mount Pleasant, Mich.; Little Water, Navajo Reservation, N. Mex.; Greenville, Cal., and Phoenix, Ariz. In course of construction are new school plants at White Earth and Vermilion Lake, Minn., and new buildings for Haskell, Kans., and Tomah, Wis. Buildings have been made ready for occupancy and new schools will open this fall at Rapid City, S. Dak.; Toledo, Iowa, and Ed

* Estimated.

Moon and Cantonment, on Cheyenne and Arapaho Reservation, Okla. The school at Olontarf has been consolidated with that at Morris, Minn., and bids have been invited for the construction of a new dormitory at Morris.

The Commissioner recommends that the Perris School be removed to some other point in southern California where good soil and water can be had. The present site lacks both, and though the buildings are inadequate and out of repair, it is not good policy to make further expenditures upon them pending a decision as to the permanent location of the school.

Nearly all of these schools have been carefully inspected during the year by the Indian inspectors, special Indian agents, and school supervisors, and the most of them found generally well conducted and in satisfactory condition as to buildings, equipment, and attendance, health, and advancement of the pupils.

Two school supervisors have been added to the force, making five in all. The Commissioner recommends that an inspector of school plants be provided, since the Government has at least a \$3,000,000 investment in Indian school buildings.

INDIAN SCHOOL SITES.—The Commissioner gives a full history as to the obtaining of sites and the titles to the lands on which are located the schools at Wild Rice River and Pipestone, Minn., and Flandreau and Rapid City, S. Dak.

TRANS-MISSISSIPPI INTERNATIONAL EXPOSITION AT OMAHA.—In the Indian appropriation act of July 1, 1898 (30 Stats., 571), an appropriation of \$40,000 was made for the purpose of illustrating the past and present conditions of the various Indian tribes of the United States, and the progress made by education, and such other matters and things as would fully show the Indian advancement in civilization, etc. Capt. W. A. Mercer, U. S. A., acting agent of the Omaha and Winnebago Agency, Nebr., was detailed to install and conduct the Congress of Indian tribes. The work was prosecuted with as much expedition as possible, and on the 4th of August, 1898, the Indian Congress was formally opened.

The plan of the congress contemplated having the Indian families of the many tribes, in native dress and dwellings, carrying on the avocations of their aboriginal life in a degree as little modified by civilization as possible. In this the congress fully realized anticipations. The scientific features of the encampment, however, which afforded unusual opportunities for the study of Indian life and race characteristics, received but little attention when compared with that given by the visitors to the congress to the Indian games, dances, sham battles, etc.

There were 545 Indians in the encampment, embracing the Sioux, Blackfeet, Assinniboine, Sac and Fox, Apache, Apache Jicarilla, Chippewa, Flathead, Kootenai, Calispel, Crow, Iowa, Ponca, Tonkawa,

Cheyenne (Southern), Arapaho (Southern), Kiowa, Apache (Geronimo's band), Wichita, Omaha, Winnebago, Pueblo, and Otoe tribes, representing 27 reservations. Included in the band of Apache prisoners of war from Fort Sill were Chief Geronimo, the famous Apache warrior, and his able lieutenant, Nachie.

There was much delay in opening the Congress, owing partly to the lateness of the passage of the bill providing the funds therefor and partly to the reluctance to attend it of many representative Indians whose presence was most desired.

In the Government building there was an Indian school exhibit setting forth the intellectual and industrial training given in ten boarding schools and a number of day schools carried on by the Government. Papers from the schoolrooms and articles manufactured in the shops, with photographs, interior and exterior, of school buildings, gave a fair idea of the aim, scope, and success of school work carried on by the Government. Examples of aboriginal taste and skill in the way of blankets, bead work, pottery, etc., make good decorative effects in installation and show the native capacity upon which civilization impresses itself.

EXHIBITION OF INDIANS.—Authority has been granted during the past year for the taking of Indians for exhibition purposes to the North Dakota State fair to Messrs. Cody (Buffalo Bill) and Salisbury, to the Milwaukee Semicentennial celebration, and to several other celebrations and exhibitions of a local character. Stipulations are always made for the proper treatment of the Indians and their safe return to their homes. Several applications for permission to take Indians away to be exhibited have been refused, for unless the greatest care in granting such privileges is exercised the Indians are liable to suffer from neglect or bad treatment.

COMMISSIONS.

COMMISSION TO THE FIVE CIVILIZED TRIBES (DAWES COMMISSION).

By the Indian appropriation act of March 3, 1893, a commission was appointed to negotiate with the Five Civilized Tribes for the purpose of the extinguishment of the national or tribal title to any lands within the Indian Territory held by any and all of such nations or tribes, either by cession of the same or some part thereof to the United States, or by the allotment and division of the same in severalty among the Indians of such nations or tribes, respectively, as may be entitled to the same, or by such other method as may be agreed upon between the several nations and tribes aforesaid, or each of them, with the United States, with a view to such an adjustment upon the basis of justice and equity

as may, with the consent of such nations or tribes of Indians, so far as may be necessary, be requisite and suitable to enable the ultimate creation of a State or States of the Union which shall embrace the lands within said Indian Territory.

By the Indian appropriation act of June 10, 1896, the Commission was further continued, and they were directed as follows: To hear and determine the applications for citizenship in the several nations; to cause a complete roll of citizenship of each of said nations to be made up from their records; to file the list of members as they finally approved them with the Commissioner of Indian Affairs; to make a roll of freedmen entitled to citizenship in said tribes and to include their names in the list of members to be filed with the Commissioner of Indian Affairs; to report to Congress as to leases, tribal and individual, and also as to the excessive holdings of members of the tribes and others.

The Indian appropriation act of June 7, 1897, still further continue the Commission, impose additional duties upon them, and construe the words "rolls of citizenship" in the act of 1896 to mean "the last authenticated rolls of each tribe which have been approved by the council of the nation, and the descendants of those appearing on such rolls and such additional names and their descendants as have been subsequently added either by the council of such nation, the duly authorized courts thereof, or the Commission under the act of June tenth, eighteen hundred and ninety-six," etc.

The report of the Five Civilized Tribes Commission shows that of the 7,500 applications for citizenship in the Five Civilized Tribes, required to be heard and determined by the Commission by the act of June 10, 1896, the following were admitted:

In the Choctaw Nation.....	1, 212
In the Chickasaw Nation.....	334
In the Cherokee Nation	274
In the Creek Nation.....	255
Total	2, 075

The large number of failures to obtain admissions is attributable to the fact that the Commission was required by the statute in determining such applications to respect all laws of the several nations or tribes not inconsistent with the laws of the United States and all treaties with said nations or tribes, and give full force and effect to the rolls, usages, and customs of said nations and tribes. A large number of those rejected have appealed, as provided by law, but as the Curtis bill (30 Stat., 495) provides that "no person shall be enrolled who has not heretofore removed to and in good faith settled in the nation in which he claims citizenship," there need be little apprehension that the roll of citizenship ultimately entitled to allotment will be duly swelled by these appeals.

The agreement of September 16, 1897, with the Seminoles has been

duly ratified and appears to be giving general satisfaction. The future of this people is very encouraging.

The agreement with the Choctaws and Chickasaws of April 27, 1897, was ratified by the council of both nations, but was rejected by the popular vote of the Chickasaw Nation. The agreement with the Creeks was rejected by the council.

As required by the act of June 7, 1897, an examination was made as to the rights of the Mississippi Choctaws to Choctaw citizenship and reported to Congress, holding that "these Mississippi Indians have a right at any time to remove to the Indian Territory, and, joining their brethren there, claim participation in all the privileges of a Choctaw citizen save participation in their annuities, but that they could not maintain this claim otherwise than after such removal;" and recommending that, in view of the importance of this claim, provision be made for a judicial determination of the question. A bill containing this provision has passed the Senate and is pending in the House.

At the request of the committee of Congress having charge of the Curtis bill during its pendency, the Commission, with the approval of the Department, remained in Washington until final action was had thereon, rendering such assistance as was in its power, based upon accurate and reliable information in relation to the many questions involved in the comprehensive scope of the proposed measure, as well as upon its experience and observation while in the Territory.

The Curtis bill, which became a law June 28, 1898, provided, among other things, for resubmission, with certain specified modifications of the two agreements—that with the Choctaws and Chickasaws and that with the Creeks—for ratification, to a popular vote in their respective nations, and provided further that if ratified the provisions of these agreements, so far as they differed from that bill, should supersede it. The Choctaw and Chickasaw agreement was submitted for ratification and was ratified August 24, 1898, by a large majority.

The agreement with the Creek Indians was rejected by popular vote of the Creek Nation on November 1, 1898.

The bill imposes many new, arduous, and responsible duties upon the Commission:

(1) The taking of a census of all the citizenship of each nation before perfecting a final roll for allotment. This compels the Commission to pass judicially upon the right to citizenship of every name upon the citizenship roll of each of the Five Tribes.

(2) The preparation of a correct roll of all the freedmen entitled to or claiming any rights under the treaties of 1866 with the respective tribes and of all of their descendants born since the date of these treaties.

(3) The determination and report to the Secretary of the Interior of the identity of the Mississippi Choctaws claiming rights in Choctaw property under the treaty of September 27, 1830.

(4) Before any allotment of land is made in the Cherokee Nation, to segregate therefrom in separate allotment or otherwise the 157,600 acres purchased by the Delaware Indians from the Cherokee Nation under the agreement of April 8, 1867, subject to the judicial determination of the Delaware rights therein. The Delawares have commenced suit in the Court of Claims for the determination of these rights.

The commission has nearly completed a census of the Creek and Chickasaw Indians and freedmen, and has fully completed that of the Seminoles, and rolls of the latter are about completed, so that the commission may, when provided with means, begin the work of allotment according to the agreement. In order to do this work an appropriation of at least \$50,000 is believed to be necessary.

Most gratifying results and greater advance toward the attainment of the objects aimed at by the Government have been accomplished in the past year than in any previous year, and what has been done is fundamental, embracing the elementary conditions essential to the healthy growth of a prosperous people. The Government should lend all possible aid in giving the right direction and needed support.

The Commission again calls attention to the necessity for providing for the education of some 30,000 white children residents of the Indian Territory. I concur in the conclusions of the Commission that ample provision should be made for the education of these white children, and have most earnestly to recommend that Congress, at an early day, make adequate appropriation for such purpose.

The full report of the Commission is hereto appended (Exhibit B).

THE CHIPPEWA INDIANS OF MINNESOTA.

The act of Congress approved January 14, 1889 (25 Stat. L., 642) entitled "An act for the relief and civilization of the Chippewa Indians in the State of Minnesota," provides for the appointment of a commission to negotiate with the different bands or tribes of Chippewa Indians in Minnesota for the complete cession of all these reservations in Minnesota, except the White Earth and Red Lake reservations and of so much of the latter as is not required for allotments to the Indians; the taking of a census and the removal of all the Indians in Minnesota, except those on Red Lake Reservation, to the White Earth Reservation; the allotment of lands to Red Lake Indians on Red Lake Reservation, and allotment of lands to all other Indians on White Earth. It further provides for survey under supervision of the Commissioner of General Land Office of all ceded lands; the appointment of experienced examiners of standing or growing pine timber thereon, at a compensation of not more than \$6 per day, including all expenses, to determine the cash value thereof, fixing the minimum of such valuation at \$3 per 1,000 feet, board measure, of pine lumber, and for reappraisement of lands in case of rejection by the Secretary of the Interior of previous appraisement.

It further provides for sale, after public notice, of pine land and agricultural lands and permits of entry of latter under homestead law at \$1.25 per acre, payable in five equal annual payments, and after five years' occupancy of lands, etc.

It also provides that the proceeds of sales of lands shall after deducting all expenses of census, obtaining cession, making removal and allotments, and completion of surveys and appraisals, be deposited in the Treasury to the credit of the Chippewa Indians in Minnesota, as a permanent fund, to draw interest at the rate of 5 per cent per annum, payable annually, for the period of fifty years, after the making of allotments, one-third of such interest payable in cash to Indians and one-fourth to be expended under the supervision of the Secretary of the Interior in establishing and maintaining a system of free schools among the Indians, and at the expiration of the period specified the permanent fund to be divided and paid to all the Chippewa Indians. It further provides that Congress may, for the purpose of promoting civilization and self-support among Indians, advance a portion of such principal sum, not exceeding 5 per cent thereof; also that the United States shall advance as such 5 per cent interest on the permanent fund the sum of \$90,000 annually until the permanent fund (exclusive of the amounts to be reimbursed the Government) shall equal or exceed the sum of \$3,000,000, less any interest that may in the meantime accrue from accumulations of the permanent fund, payments of such interest to be made yearly in advance, three-fourths, in the discretion of the Secretary of the Interior, during first five years to be expended in procuring live stock, teams, farming implements, and seed for such of the Indians, to the extent of their shares, as are fit and desire to engage in farming, and the balance in cash. It further provides that whenever the permanent fund exceeds the sum of \$3,000,000 the United States shall be fully reimbursed out of such excess for all advances of interest made or contemplated and other expenses incurred under the act. One hundred and fifty thousand dollars was appropriated to carry it into effect.

The commissioners appointed February 26, 1889, pursuant to the provisions of this act entered at once upon their duties of negotiating with the Indians, and on March 4, 1890, the agreement concluded by them with the Indians for the cession of their lands, etc., was approved by the President and transmitted to Congress. Subsequently a census was taken, surveys of the land were entered upon, and in August of 1891 examiners of the pine lands were appointed. The Commission began the work of making allotments on the White Earth Reservation December 9, 1891; their progress, however, was necessarily slow, owing to the disinclination of the Indians to accept allotments, etc., and up to September 1, 1893, allotments of 80 acres each had been made at the White Earth Reservation to 2,209 Indians, and 643 Indians were removed to the White Earth Reservation, and 85 others, after their removal, returned to their former homes. In May of 1893 a new corps

of Chippewa timber examiners were appointed. In the Annual Report of the Secretary of the Interior for the fiscal year ended June 30, 1894, it is stated of these examiners and the work intrusted to them that—

During the first year of their work under the present administration they examined 609,000 acres, while the former corps examined 435,000 in fourteen months.

There remains about 1,900,000 acres to be examined, which, at the rate established by the present corps, will take over three years from this time. The rate of progress will, however, largely depend upon whether the lands are heavily or sparsely timbered.

The law as it now stands provides for the sale of the timber only after all of the land shall have been surveyed, examined, and appraised, and seems also to contemplate the offering of the entire body of land at one time and place. There exists a present demand for the timber. While the timber continues in the possession of the Government it is liable to injury at any time from depredations of trespassers, accidental and intentional fires, from storms, and perhaps other occurrences.

A large portion of the pine lands, comprising considerably more than 100,000 acres, have already been surveyed, examined, and segregated, and might be offered for sale, without delay, if there were legal authority for so doing. Such authority is presented in H. R. bill 5103. It has passed the House, and it is earnestly to be desired that it speedily pass the Senate.

By act of Congress, approved February 26, 1896 (29 Stat. L., 17), the act relating to the cession of the Chippewa lands, approved January 14, 1889 (25 Stat. L., 642), was amended so as to provide that whenever and as often as the survey, examination, and appraisal of 100,000 acres of pine lands, or of a less quantity, in the discretion of the Secretary of the Interior, have been made, the portion so surveyed, examined, and appraised shall be proclaimed as in market and offered for sale, etc.

The first offering, therefore, of pine lands in the Chippewa Reservation in Minnesota, under this legislation, took place in July, 1896, at which time 115,342.78 acres containing 225,977,000 feet of pine, valued at \$686,333, were offered, and 65,038.33 acres, containing 118,224,000 feet, valued at \$369,282.34 were sold, leaving 50,304.45 acres containing 107,753,000 feet, valued at \$317,050.66, unsold and subject to private sale for cash at the appraised value.

Complaint having been made to my immediate predecessor of incompetency and mismanagement on the part of the then employed corps of Chippewa examiners, consisting of twenty-seven men, thirteen of whom were from Minnesota, and fourteen from other States that have no timber of the same character as that to be examined in Minnesota, United States Indian Inspector J. George Wright was, on the 20th of October, 1896, directed to make an investigation of the matter, and on December 31, 1896, he reported inexperience and carelessness on the part of said corps, and that on an examination of 85 tracts made by him, and experts under him, much more pine was found than was reported by the examiners. In consequence of this report, all of the unsold pine land (50,304.45 acres) was withdrawn from sale on January 4, 1897, the timber examiners relieved from duty.

Of the amount of land so withdrawn 41,843.44 acres were, on August

3,1897, ordered reexamined, leaving 8,460.01 acres, containing 12,133,000 feet of pine, valued at \$36,399, subject to private sale for cash at the appraised value.

In May, 1896, 1,038,888.64 acres of agricultural lands were opened to settlement and entry. Of this amount 116,461.90 acres were withdrawn from settlement and entry August 3, 1897, on account of the unreliability of the previous examination thereof, and ordered reexamined, leaving 922,426.74 acres, which, at the price fixed by the law, were valued at \$1,153,033.42.

The reexaminations ordered, as well as new examinations, were made by a board of examiners selected with great care in August, 1897, of competent men who were not on previous boards, and who were from timber regions, experienced in estimating timber, and accustomed to the climate in the vicinity of this land. This board consists of 23 men, 17 of whom are from Minnesota, specially versed in the business of examining timber and acquainted with the country and conditions of the timber, the others were individually recommended as being well versed in the examination of timber and from States where timber similar in character to that to be examined existed in large quantities.

Of the agricultural lands reexamined by this corps, 4,706.17 acres were found to contain enough timber to be classed as pine lands, and they were raised to such class, their valuation thereby being considerably enhanced. In August, 1898, 61,151.57 acres, including lands reexamined and lands examined for the first time, containing 129,379 thousand feet, valued at \$391,975.86, were offered for sale, and of this amount 21,507.15 acres were sold for \$173,969.37, leaving 39,644.42 acres subject to private sale for cash at the appraised value.

On about 38,960 acres reexamined the present corps of examiners found 106,993 thousand feet of pine, as against 92,353 thousand feet found by former corps of examiners, which represents a saving of \$43,920 to the Indians.

There were also opened to entry on October 5, 1898, 367,964.09 acres of agricultural lands on the Red Lake Reservation, which, at the price fixed by the act of 1889, will amount to \$459,617.61.

The aggregate acreage of Chippewa pine and agricultural lands to be sold originally was 2,984,297.98, exclusive of the land allotted to the Indians. There have been disposed of to date 86,545.48 acres of pine lands and 320,634.01 acres of agricultural lands, aggregating 407,179.49 acres. The total amount received from the sale of pine and agricultural lands is, approximately, \$659,913.41, which has been deposited in the Treasury to the credit of the Indians, as required by law. Of the agricultural lands sold, 320,634.01 acres were embraced in homestead entries, on which there are due \$400,543.44.

Under the act of January 14, 1889, providing for the cession of these Chippewa lands, etc., there have been appropriated by Congress up to

the present time, as an advance to the Chippewa Indians, the following sums, to wit:

For negotiating for cession and relinquishment, making census, etc.....	\$60, 000
As advance interest (at \$90,000 per annum)	810, 000
Of the permanent fund, for civilization and self-support.....	815, 559
For surveying, appraising, and allotting.....	375, 000
	<hr/>
	2, 060, 559

Under the terms of the act of January 14, 1889, this amount appears to be reimbursable to the United States. From the statement of the lands belonging to these Indians hereto appended (Exhibit C), it will be seen that the approximate value of all the lands ceded by the Indians aggregates \$5,273,010.72. Upon the disposal of all such lands it is doubtful whether compliance with the requirements of this act regarding the reimbursement of moneys advanced by the United States would impose any very great hardship on the Indians.

No complaints have been made of the undervaluation of timber by the present corps of examiners. They have performed their work more expeditiously than did the former board, and have, by reason of their experience, discovered more timber.

Under authority contained in the act of June 7, 1897 (30 Stat. L., 90), which empowered me to authorize the Indians on the reservation to fell, cut, remove, or otherwise dispose of all the dead and down timber thereon, a set of logging regulations was formulated under which fifty contracts were let to the Indians for logging such dead and down timber, embracing 30 sections of land in the White Earth Reservation, 39 in the Red Lake Reservation, 260 in the Leech Lake, Winibigoshish, and Cass Lake reservations.

Fifty-five million feet of dead and down timber were cut and banked by the Indians under these contracts, producing, in the aggregate, \$264,160.41. This amount of money was paid to the Indian agent, who, after deducting 15 per cent thereof for the use of all the Chippewa Indians, disbursed for the Indian contractor, in the manner hereinafter indicated, any sums due for supplies, labor, etc., incurred by him in the execution of the work. The 15 per cent referred to was deducted from the aggregate value of all the contracts on account of stumpage and other expenses, and a greater part thereof has been deposited in the Treasury to the credit of the Chippewa Indians as the result of the logging operations on the ceded lands.

Logging operations similar in character have been conducted under the supervision of the Commissioner of Indian Affairs on the White Earth and the Red Lake diminished reservations, resulting in the cutting of dead and down timber under contract with the Indians, aggregating in value \$110,596.32, of which amount 10 per cent was deducted for stumpage charges and deposited to the credit of the Chippewa

Indians of Minnesota. The total amount of money collected on account of stumpage under these Indian logging contracts on both the ceded lands and the diminished reservations is \$46,246.38. This, together with sums from similar sources, is applicable for per capita payments among all the Indians.

The regulations promulgated governing the performance of this work and the contracts issued thereunder contemplated the payment of all moneys for such logging by the Indian contractor to the Indian agent at White Earth Agency, he to deduct therefrom 15 per cent in the case of the ceded lands and 10 per cent in the case of the diminished reserve for the benefit of all the Chippewa Indians, less the expense of advertising sale of logs, superintendence, etc, the balance remaining under the contract to be paid to persons advancing money and supplies to the Indian contractor, the scalers of logs, foremen, teamsters, cooks, etc, laborers of the loggers, and any amount remaining under the contract to the Indian contractor, thereby insuring the employment of many Indians during the winter season and the providing in addition of a reserve fund for the benefit of all the Chippewas from timber heretofore regarded as worthless.

In but one instance was the cutting of green timber discovered, and thereupon the tools of the loggers were immediately seized and all operations by the parties were stopped and they were compelled to pay, at the Government price, for the green timber cut.

The result of the dead and down timber logging operations on the reservations during the year clearly indicate the wisdom of the carrying on of the work by the Indian contractors under the regulations prescribed, as being in the interest of the Indians.

Logging operations on this reserve were discontinued some time ago, but the Indians recently petitioned for a resumption of the work; these petitions will receive favorable consideration, the work to progress, however, under the same restrictions as heretofore.

The Chippewa commissioner, D. S. Hall, has continued his work of allotting lands to the Chippewas in Minnesota, and of removing to White Earth Reservation such Indians as could be induced to make their homes there. During the year 565 allotments of 80 acres each have been made, and changes have been made in the allotments previously assigned Indians to the number of 121.

The Indians removed to White Earth Reservation are 30 Leech Lake Pillagers, 5 White Oak Points, and 24 Mille Lacs. Seven houses, costing \$75 each, have been built for the removed Indians, and 5 others are in process of erection.

Considerable effort has been made to induce the Mille Lac Chippewas to go to White Earth, but with meager success. The commissioner expresses the hope, however, that quite a number will remove there this fall. The expenditures made by the commission between September 1, 1897, and August 31, 1898, amounted to \$14,017.49.

TROUBLES WITH CHIPPEWAS AT BEAR ISLAND ON LEECH LAKE.

In September, last it having been reported to the Department that there was likely to be trouble at Leech Lake, Minnesota, between the Pillager Indians, one of the bands of the Chippewas, and whites, Agent Sutherland and Inspector Tinker were directed to investigate the matter and report by wire, and the honorable Secretary of War was requested to send troops to Leech Lake to preserve peace and protect life and property. The matter was also brought to the attention of the honorable Attorney-General, with suggestion that the United States attorney for Minnesota put himself in communication with the inspector and agent.

On October 1, 1898, Agent Sutherland reported that he found the trouble with the Indians was caused by a deputy United States marshal, who arrested an Indian on a warrant; that the deputy was overpowered by the Indians, and the prisoner was taken away from him.

On October 3 Inspector Tinker reported the arrival of troops, and that Indians were gathering in all the arms possible, and that they refused to surrender the guilty parties.

On October 5 the Indians, who had concentrated on Bear Island, in Leech Lake, fired upon the troops, and a battle was fought, in which Major Wilkinson and 6 soldiers were killed and 12 soldiers and 1 Indian policeman were wounded. Inspector Tinker and United States Deputy-Marshal Shehan were also wounded.

On the 6th of October reenforcements arrived, and the following day a council was held by Agent Sutherland with the Indians, in which it was stated that they desired peace.

In view of the situation, I directed the Commissioner of Indian Affairs to proceed to White Earth and confer with the Indians. His efforts were successful, and the Indians surrendered.

The origin of the trouble with the Indians is now under investigation by this Department and the honorable the Attorney-General.

UNCOMPAHGEE AND UINTAH INDIANS AND COMMISSIONS.

In preparation for the opening of the Uncompahgre Reservation to settlement, Congress directed that the Uncompahgres should receive allotments so far as possible on their own reservation, and the remainder on the adjoining Uintah Reservation or elsewhere in the State of Utah.

An agreement was made by the Crow, Flathead, Cheyenne, and Uintah commission with the Uintah Indians to receive such Uncompahgres, and under said agreement, 208 allotments have already been made. There are 300 yet unallotted. The agreement has not been ratified by the Senate. It is very desirable that the agreement should be ratified in order that the work may be promptly completed. Congress at its last session instructed the Department to send a commission to the Uintahs to treat with them for the sale of all their lands in

order that all not needed for allotment might be offered for sale. The terms specified for such agreement were not acceptable to the tribe and the commission has reported that no agreement can be made. The Uintah Indians own their reservation, and their decision to hold their lands can not be controlled.

The Crow, Flathead, Northern Cheyenne, Uintah, and Yakima Commission have concluded an agreement with the Indians of the Fort Hall Reservation for the cession of their surplus lands.

The Puyallup Commission, consisting of one commissioner, Clinton A. Snowden, has, during the year, conducted sales of Puyallup lands, collected deferred payments on lands previously sold, obtained consent of allottees for sales of portions of their allotments not needed for homes, determined who are rightful owners and heirs, etc. The special appropriation for this work having been exhausted, the Department decided that the necessary expense of such land sales, except the salary of the commission (otherwise provided for), could be met from the proceeds of the sales.

ALLOTMENTS AND PATENTS.—During the year patents have been issued and delivered to the following Indians:

Sioux of the Crow Creek Reserve, S. Dak	10
Sioux of the Devils Lake Reserve, N. Dak., (including three previously issued but not delivered)	96
Mission Indians on the Temecula Reserve, Cal	85
Omahas, Nebraska	8
Sac and Fox of the Missouri, Kansas, and Nebraska	8
Winnnebagoes, Nebraska	5
Chippewas, Lake Superior, Lac Court d'Oreilles Reservation, Wis.....	18
Yakimas, Washington.....	1,713

Allotments have been approved by the Department, and patents are now being prepared in the General Land Office for the following Indians:

Chippewas of Wisconsin, Bad River Reservation.....	135
Sioux of the Devils Lake Reservation, N. Dak.....	260
Indians of the Hoopa Valley extension (connecting strip), California.....	478

Schedules of the following allotments have been received, but have not been finally acted upon:

Sioux, Rosebud Reservation, S. Dak.....	844
Chippewas, Lac du Flambeau Reservation, Wis	135

On the Otoe Reservation, Okla., Special Allotting Agent Helen P. Clarke has made 191 allotments. A large faction of the Otoes persistently oppose allotments, which makes the work slow.

On Klamath Reservation, Oreg., they are nearly completed. A United States court decision has declared that lands within this reservation granted to the State of Oregon are subject to allotment to Indians.

On the Umatilla Reservation 40 or 50 Indians who were absent when allotments were made there have been allowed to take allotments.

Agreements have been negotiated for the surrender to the Lower Brule Sioux of lands selected by them south of White River, on the Rosebud Reservation. When the agreements are ratified the Lower Brules will be allotted on the selected lands.

On the Rosebud Reservation allotments are in progress.

On the Sioux ceded lands allotments have been made to seven families; those to the family of John Bobtail Crow have been stubbornly contested by white men for several years, with the final decision in favor of the Indians.

On the Uncompahgre Reservation the law required that allotments should be made prior to April 1, 1898, the date upon which all the reservation lands, except those containing gilsonite, asphalt, etc., should be thrown open. Owing to severe weather none were made there until after that date. Schedules have been forwarded, covering 283 allotments to Uncompahgres, 75 being on the late Uncompahgre Reservation, and 208 allotments made to the Uncompahgre Utes upon the Uintah Reservation.

On the Yakima Reservation 471 allotments have been made to Indians hitherto living off the reservation, who have been persuaded to make it their home.

Completion of allotments on the Shoshone Reservation has been delayed waiting for official surveys. One thousand three hundred and eighty-eight have been made there.

Off reservations 272 allotments have been made to Pintes in the Burns land district, Oregon, and to other Indians in the Susanville district, California.

INDIAN TERRITORY UNDER THE CURTIS ACT.—On June 28, 1898, there was approved an act of Congress entitled, "An act for the protection of the people of the Indian Territory, and for other purposes." (30 Stat., 495.) This legislation made many material and radical changes in the relations of the several tribes of Indians in the Indian Territory to the Government of the United States.

The first ten sections of said act relate to civil and criminal proceedings in the United States courts for said Territory regarding the rights of those claiming membership in the Five Civilized Tribes, and also granting to noncitizens certain privileges in respect of a certain amount of land in their possession under agreement with either of said tribes, or any citizen thereof, made prior to January 1, 1898.

Section 11 requires the Dawes Commission to allot the exclusive use and occupancy of the lands of the respective nations when the rolls of citizenship shall have been completed, and there is reserved for the tribes all oil, coal, asphalt, or mineral deposits, and town sites, and for schools, churches, public buildings, and charitable institutions land necessary for use, with a limitation as to amount.

Section 12 requires allotments under section 11 to be confirmed by the Secretary of the Interior.

Section 13 authorizes the Secretary of the Interior to provide rules and regulations in regard to "the leasing of oil, coal, asphalt and other minerals," fixes the amount of royalty to be paid in advance by the lessee, secures the right of any holder or owner of a leasehold interest in minerals, which have been "assented to by act of Congress," giving the preference to such parties in the renewal of their leases and also giving preference, in the making of mineral leases, to parties in possession who have made improvements on mineral land. The section also provides that the rate of royalty shall be fixed by the Secretary of the Interior.

Section 14 authorizes the inhabitants of any city or town in said Territory having 200 or more residents to be incorporated under the laws of Arkansas, and gives the right of suffrage in any election under this section to "all male inhabitants" over 21 years of age who have resided in the city or town more than six months prior to the election. Said section also prescribes the manner of conducting the election in said city or town, and prohibits the sale or introduction of any intoxicating liquor into said Territory, and also provides "that owners and holders of leases or improvements in any city or town shall be privileged to transfer same."

Section 15 provides for a commission for each town in the Choctaw, Chickasaw, Creek, and Cherokee tribes, of one member to be appointed by the executive of the tribe, one by the Secretary of the Interior, and one by the town, and upon failure of the town or tribe to select their members, the same may be appointed by the Secretary of the Interior. Said section also prescribes the manner of laying out town sites where the same have a population of 200 or more, and regulates the manner in which owners of improvements upon any town lot may acquire title to the lot.

Section 16 makes it unlawful for any person to claim for himself or for anyone to pay to any individual any royalty or rent on any land or property belonging to either of said tribes, and the same are required to be paid into the United States Treasury for the use of the tribe to which they belong, under regulations to be prescribed by the Secretary of the Interior, with a proviso allowing any citizen to receive the rents upon agricultural or grazing lands to the amount of his share and that to which his wife and minor children are entitled to have allotted to them, and also providing that said section shall not impair the right of any member of a tribe to dispose of any timber on his allotment.

Section 17 makes it unlawful for any citizen of any tribe to inclose a greater amount of land than his share and that of his wife and minor children under the allotment, and makes a violation thereof a misdemeanor at the expiration of nine months from the passage of said act.

Section 18 prescribes the penalty for a violation of said sections 16 and 17.

Section 19 prohibits the payment of any moneys on any account by

the United States to any of the tribal governments for disbursement, and requires the payment of all sums to be made to members of said tribes and per capita payments to be done under the direction of the Secretary of the Interior.

Section 20 allows the Dawes Commission to employ necessary assistance, with the permission of the Secretary of the Interior.

Section 21 gives directions to the Dawes Commission relative to the making of rolls of citizenship of the several tribes, which rolls, when duly made and approved by the Secretary of the Interior, are declared to be final.

Section 22 provides that members of one tribe who have made homes on the lands of another may take an allotment of the same under an agreement of the tribes.

Section 23 declares that all leases of agricultural and grazing tribal lands made after January 1, 1898, shall be void, and grazing leases made prior to said date shall end on April 1, 1899, and agricultural leases shall terminate on January 1, 1900; but individuals may lease their allotments when duly made under said act, and may occupy and rent their proportionate shares of tribal lands until allotment thereof is made.

Section 24 requires moneys collected under said act to be paid into the United States Treasury at St. Louis, Mo., to the credit of the tribe to which they belong.

Section 25 requires the segregation from the lands of the Cherokee Nation, prior to any allotment thereof by the Dawes Commission, of 157,600 acres, purchased by the Delaware tribe of Indians from the Cherokee Nation under the agreement of April 8, 1867, and allows either tribe to bring suit in the Court of Claims, within sixty days after the passage of said act, to determine the rights of the Delaware Indians to lands and funds under said agreement, with right of appeal to the United States Supreme Court by either party.

Section 26 prohibits the enforcement at law or in equity by the courts of the United States in the Indian Territory of the laws of the several tribes thereof.

Section 27 provides for the location of an Indian inspector in said Territory to perform any duties required of the Secretary of the Interior by law relating to affairs therein.

Section 28 declares that after July 1, 1898, all tribal courts in the Indian Territory shall be abolished, but provides that said section shall not apply to the Choctaw, Chickasaw, and Creek tribes until October 1, 1898.

Section 29 sets out the agreement made by the Choctaw and Chickasaw tribes on April 23, 1897, with the Dawes Commission, and ratifies and confirms the same as amended therein, and provides that if said agreement, as amended, is duly ratified prior to December 1, 1898, the provisions of this act shall then only apply to said tribes where

the same do not conflict with the provisions of said agreement," and also declares that nothing in said agreement as amended shall affect the provision of section 14 of said act.

This agreement, which was duly ratified by said nations August 24, 1898, specifically provides for the allotment of lands so as to give to each member of said tribes an equal share of tribal lands, based upon the character and fertility of the soil and the location and value of the same. It also provides for the appointment of a town-site commission for each of said nations, consisting of one member to be appointed by the executive of the tribe and the other to be appointed by the President of the United States, and describes the manner in which said commission shall lay out town sites and dispose of town lots. It also declares that no charge or claim shall be made against the tribes by the United States for the survey of town sites, the allotting of lands, or the disposal of town lots.

It is further provided that all the coal and asphalt within said nations shall remain the common property of the members thereof (except freedmen), and that no patent shall convey any title thereto; that the revenues from coal and asphalt shall be used for the education of children of Indian blood of the members of said tribes; that all mines now in operation, and those which may hereafter be leased and operated, shall be under the supervision and control of two trustees, who are required to give bond as prescribed by the Secretary of the Interior, and whose compensation is to be fixed and paid by their respective nations, each of whom is required to make a full report of his acts to the Secretary quarterly. The revenues derived from mines are to be paid into the Treasury of the United States, and to be drawn therefrom under rules and regulations prescribed by the Secretary of the Interior. The agreement also validates contracts made by the national agents of said nations for coal and asphalt, which were being carried on in good faith on April 23, 1897, and the lessees are given the right to renew the same under the provisions of this agreement.

It is further declared that the tribal governments as modified by said agreement shall continue for the period of eight years from March 4, 1898; and this stipulation is declared to be made in the belief that the tribal governments, as modified, will prove so satisfactory that there will be no necessity for change until the Territory now occupied by the Five Civilized Tribes shall, in the opinion of Congress, be prepared for admission as a State into the Union, and it is expressly declared that this stipulation shall not be construed as an abdication by Congress of its right to make in any respect the needful rules and regulations to govern said tribes.

The agreement further provides that all per capita payments to the members of the Choctaw and Chickasaw tribes shall be made directly to the individual members by a bonded officer of the United States, under the direction of the Secretary of the Interior. There is also

appropriated, under treaty stipulations, to the Choctaw Nation of Indians, for arrears of interest, \$558,520.54, with a proviso that the Secretary is authorized to pay any attorney's fees out of the same on contract theretofore made and duly approved by the Secretary of the Interior. It is further provided that the "funds invested, in lieu of investment, treaty funds, or otherwise, now held by the United States in trust for the Choctaw and Chickasaw tribes, shall be capitalized within one year after the tribal government shall cease".

Section 30 contains the agreement entered into by the Commission to the Five Civilized Tribes with the Creek tribe of Indians, and ratifies and confirms the same as amended, provided said agreement is duly ratified before December 1, 1898, by the members of said tribe.

The general provisions of the Creek agreement are similar to those in the Choctaw-Chickasaw agreement, the Creek agreement, however, was rejected by the Creek Nation on November 1, 1898.

On July 25, 1898, an order was issued creating in the Office of the Secretary of the Interior a division to be known as the Indian Territory division, which was placed in charge of Mr. Luther R. Smith, an assistant attorney from the office of the assistant attorney-general for this Department, and said division was given jurisdiction of "all business relating to the Indian Territory and the Five Civilized Tribes, excepting such matters as more properly belong to the appointment and finance divisions."

Prior to the formation of said division the Department had taken action concerning the enforcement of some of the provisions of said act of Congress approved June 28, 1898 (30 Stat., 495).

On July 21, 1898, the Department made provisional regulations under sections 13, 16, 23, and 24 of said act, in order that the business of the Territory under contracts, leases, permits, etc., might not be interfered with, and the Commissioner of Indian Affairs was advised—

That all rents and royalties arising from such contracts, leases, permits, etc., as were in force at the time of the passage of said act shall hereafter, and until otherwise provided, be collected on the basis of such contracts, leases, permits, etc., and the proceeds paid into the Treasury of the United States to the credit of the respective tribes, in compliance with the provisions of the act.

The Indian agent for said Territory was also directed to—

Ascertain what contracts, leases, or permits were in existence and in operation at the date of the passage of the act, whether mining, agricultural, or grazing leases, or for cutting timber, lumber, or hay, or any other kind of property whatsoever, or for rents on any lands or property belonging to any one of said tribes; whether the payments made or to be made thereunder were upon the basis of a royalty, or of a specific sum for a specific quantity of any kind of property or product, or for the use of property for a term, such as rental or lease by the month or year; when the last payments were made; whether the lessees, contractors, or permittees have since continued operations under their several grants, of whatever character, and the amount of royalties, lease moneys, rentals, etc., that have accrued since their last payments to the tribal authorities.

The Indian agent was further directed—

To give immediate notice to such contractors, lessees, or persons having permits from the tribal authorities that all royalties, lease moneys, rents, etc., that have accrued since their last payments to those authorities, or since the 28th day of June last, and are unpaid, or that may hereafter accrue under their several grants, shall be paid, through him, into the Treasury of the United States to the credit of the tribe to which they belong.

Said regulations were declared to be inapplicable to the Seminole Nation, as they had ratified their agreement with the United States, and the same had become operative by the act of Congress approved July 1, 1898 (30 Stat. L., 567).

On July 26, following, said regulations were construed by the Department as including "import taxes, per capita assessments, or other charges upon cattle imposed by the laws of the respective tribes upon the basis of such laws."

The provisional regulations hereinbefore referred to have not been modified, except with relation to the Choctaw and Chickasaw nations, whose agreement, as set out in section 29 of the act of June 28, 1898, was duly ratified by them on August 24, 1898. Since the dates of said ratifications, respectively, the tribal authorities of said nations have been charged with the collection of their revenues, except as expressly modified by the terms of said agreement relative to the disposition of town sites and the collection of royalties on mineral lands.

No action has been taken under the provisions of section 15 of said act of June 28, 1898, for the reason that no appropriation was made for the purpose of carrying into effect any of the provisions of said act.

Under the provisions of section 27 of said act of June 28, 1898, and section 1 of the Indian appropriation act of July 1, 1898 (30 Stat. L., 571), an Indian inspector was located at Muscogee, Ind. T., and directed to confer with the Indian agent in charge of the Union Agency, to generally supervise his administration, and to see that the law is efficiently enforced and that all revenues were carefully collected and all disbursements of moneys were correctly made.

Many novel and difficult questions have arisen in the execution of said act of June 28, 1898, principally with reference to the disbursement of funds under section 19 of said act and the collection of revenues and disposition of same under the provisions of sections 16 and 24 thereof. In order that there might be no illegal disbursements of the funds belonging to any of the Five Civilized Tribes requests have been made by the Department to the Comptroller of the Treasury for his decision under the provisions of the act of Congress approved July 31, 1894 (28 Stat. L., 162-208).

On August 23, 1898, the Comptroller of the Treasury, at the request of this Department, decided that it was not the intention of the agreement made with the Seminole Indians on September 16, 1897, which was ratified by Congress in the act of July 1, 1898 (30 Stat., 567), to deprive the Seminole tribal government of its privilege and duty of dis-

bursing its own funds prior to the time of the extinguishment of its tribal government, and that moneys due said Indians could be turned over to the tribal authorities for disbursement until the tribal government should go out of existence. Afterwards, on August 30, 1898, the Comptroller of the Treasury, on request of this Department, construing section 19 of said act of June 28, 1898, with reference to the payment of moneys due the Creek Nation of Indians under said Indian appropriation act of July 1, 1898, said:

There does not seem to be room for serious doubt as to the meaning of the opening lines of section 19 of the act of June 28, 1898, *supra*. They import a plain, unqualified, and comprehensive prohibition of all payments by the United States to the tribal governments, or any officer thereof, on any account whatever for disbursement. Had the intent been simply to provide for payments to members of the tribes, either per capita or otherwise, by a disbursing officer of the United States, the prohibition found in the first three lines was unnecessary. In view of this plain prohibition, I think no payments can be made to the Creek authorities if the section applies to them.

The Comptroller further held that if the agreement set out in section 30 of the act of June 28, 1898, should be duly ratified, then the tribal authorities would have the right to make payment of their moneys, except those required to be made to the members of said nation, which must be done by a bonded officer of the United States under the terms of said agreement.

Again, on October 6, 1898, the Comptroller decided with reference to the Cherokee Nation that under said section 19 it is within the power of the Secretary of the Interior to have the interest moneys due said nation disbursed by some disbursing officer of the United States for the purposes authorized by its treaties and laws, and that "the only change that appears to be contemplated by the section referred to is a substitution of a disbursing officer of the United States for the treasurer of said nation." Under said ruling of the Comptroller of the Treasury, the Department will proceed to disburse the moneys due the Cherokee Nation from the United States under the laws and treaties made with said nation.

The agreement with the Choctaw and Chickasaw nations set out in section 29 of the act of June 28, 1898, provides: "That the United States shall survey and definitely mark and locate the ninety-eighth (98th) meridian of west longitude between Red and Canadian rivers before allotment of the lands herein provided for shall begin." This provision has not been executed, for the reason that no appropriation has been made by Congress for the necessary expense in executing the same.

Rules and regulations have been prescribed by the Department for making mineral leases in the Choctaw and Chickasaw nations under the provisions set out in section 29 of said act, and two mineral trustees have been appointed by the President as therein provided. Rules and regulations have also been issued by the Department for the selec-

tion and renting of prospective allotments of lands in the Indian Territory, and giving directions concerning the leasing of mineral lands, the collection of royalties and revenues and the disbursement of the same under the direction of the Secretary of the Interior, and for the supervision of schools in said Territory in accordance with the general provisions of said act of June 28, 1898.

Copies of said regulations are hereto appended (Exhibits D, E, and F).

While the law is, for manifest reasons, not yet in full operation, its existence and the knowledge that its provisions will be enforced is having a salutary effect upon the nations composing the Five Tribes. It is true that the nonprogressive elements of the tribes express more or less dissatisfaction with its provisions, as they would to any change in their government. The more progressive elements, however, favor this law and appear inclined to accept the situation in good faith.

The Choctaw and Chickasaw, and the Seminole nations have, respectively, as heretofore stated, entered into agreements with the United States which modify, in some respects, this law, leaving the Cherokees and Creeks, who have as yet made no agreement with the United States, the remaining nations of the Five Civilized Tribes in which this law in all its provisions will be enforced.

INDIAN HOMESTEADS.—Homesteads have been taken recently by 40 Winnebagoes in Wisconsin under the acts of 1875 (18 Stats., 420) and of 1881 (21 Stats., 316). The 680 homestead entries previously made by Wisconsin Winnebagoes, which have been under investigation for several years, have finally been disposed of, with the exception of eight cases. The usual number of contests by white men against Indian homesteads have come up for action during the year.

IRRIGATION.—The Gila Bend Reservation in Arizona is still suffering for lack of water, as was reported last year.

An expenditure of \$1,500 has been authorized on the Navajo Reservation to assist Indians in constructing small storage ponds and ditches. The expenditure of \$3,500 in completing what is known as the Red Lake system, which will irrigate about 1,000 acres, has been recommended and is under advisement.

On the Fort Hall Reservation, Idaho, the Idaho Canal Company has completed two diverting dams across Blackfoot River and delivered an additional 100 cubic feet of water per second, and their second payment (\$37,500) has been made them, according to the terms of their contract with the Government. Since then a \$50,000 mortgage has been put upon that part of their property known as the Government Canal, and liens and suits aggregating \$16,887.64 have been filed against the company and its affairs have been placed in the hands of a receiver. Nothing is now being done toward the completion of its contract.

On the Crow Reservation, east of the Big Horn River, one of the largest and best constructed irrigation works in the country is well

advanced, with 12 miles of canal finished, and the head gate well under way. It has already cost \$175,000, and \$138,000 more will be required to complete it, when it will irrigate 45,000 acres of unusually fine land. The Indians have done much of the work of excavating, etc., and have petitioned that the sum required to finish it be taken from their tribal funds. Recommendation was made to Congress at its last session that \$120,000 of Crow money be diverted for this purpose, but no action was taken. It will be renewed during the coming session. When the work is completed the Indians can receive allotments, and will doubtless be willing to cede part of their reserve.

Authority has been granted for expending \$32,210 for the construction on the Fort Belknap Reserve of a system of irrigation and for the repair of the Peoples Creek system and its extension. The construction of another, known as system No. 2, at a cost of \$34,963, has been recommended. These expenditures are payable from funds belonging to the Indians.

Request made of Congress at its last session to appropriate \$140,000 for irrigation on the Fort Peck Reservation failed to receive favorable action. The Indians would cede part of their lands to obtain funds for irrigation, but it is doubtful if there is any authority of law for negotiating with them.

The bulk of the appropriation for irrigation for the fiscal year 1898 has been expended as follows:

Southern Ute, in Colorado.....	\$8,500
Uintah, in Utah.....	9,210
Wind River, in Wyoming.....	1,525
Yakima, in Washington.....	1,946
Flathead, in Montana.....	3,598
Pyramid Lake and Walker River, in Nevada.....	900
Havajo, in Arizona.....	500
Western Shoshone, in Nevada.....	500

The subject of irrigation for the Southern Utes is taken up under that head.

The last Indian appropriation act provided for the appointment of an inspector "competent in the location, construction, and maintenance of irrigation works." Mr. W. H. Graves has been appointed to this position, and his place as superintendent of irrigation on the Crow Reservation has been filled by the appointment of Mr. W. B. Hill.

LOGGING ON RESERVATIONS.—The timber cut and sold during the season of 1897–98 on the Chippewa lands in Minnesota is fully discussed on pages 35 to 40 of this report.

On the Bad River Reservation, Wisconsin, 24 allottees have had new allotments given them in place of those from which the timber had been burned, and the purchase of the timber on the new allotments has been authorized.

The timber on allotments belonging to the Red Cliff Indians in Wisconsin has been disposed of at public sale to Frederick L. Gilbert for

\$416,662, estimated on the quantity of timber supposed to be on the allotments. Contracts for the timber at the prices offered are made with the individual allottees, and 70 such contracts have been approved. The regulations required that all timber cut on the reservation should be sawed in a mill to be erected on the reserve, but a modification was made which permitted Mr. Gilbert to remove immediately from the reservation, for manufacture outside, of a quantity of burnt timber cut by the Indians during 1896-97.

Under Department authority of August 11, 1897, the Monomonees cut and banked 16,000,000 feet of logs on the Wolf and Oconto rivers, which were sold at an average price of \$12.81½ per 1,000 feet, an increase of \$2.61½ over the price secured in 1896-97. April 13 last, the State of Wisconsin attached all the logs on the Oconto River, claiming that a large part of the 16,000,000 feet had been cut on State lands. A commission, representing all parties interested, finally decided that 1,044,500 feet had been removed from lands belonging to the State, and July 25 last the Department authorized that the trespass be settled on the basis of \$8 per 1,000 feet. Meantime Perley Lowe & Co. (purchasers of the timber) gave an indemnity bond for \$25,000 (the balance due on their contract) in order that they might not be embarrassed in disposing of the logs which they had purchased, and after the settlement they were required to deposit that amount.

LEASING OF INDIAN LANDS.—Leases of tribal lands have been made as follows:

Crow Reservation, Mont., 5 grazing leases for five years, 1 for four years; area, 199,000 acres; annual rental, \$6,984.90.

Kiowa and Comanche Reservation, Okla., 23 grazing leases for one or three years; total area, 1,885,358 acres; total annual rental, \$188,617.32; also, 1 grazing permit for 2,000 acres, nine months, for \$200; further information touching these Indians will be found on page —.

Wichita Reservation, Okla., 12 grazing leases for one year, aggregating 219,156 acres, at an annual rental of \$13,064.48; also, 8 informal permits, allowing the grazing of 9,825 head of cattle for one year or less for a total payment of \$506.90.

Omaha Reservation, Nebr., 31 grazing leases for one year, aggregating 17,896.97 acres, total rental of \$6,969.73. One five-year lease of 12,002 acres was mentioned last year.

Winnebago Reservation, Nebr., 36 grazing leases for one year, aggregating 6,725.56 acres, total rental of \$2,832.28. One five-year lease of 2,240 acres was mentioned last year.

Osage and Kaw Reservation, Okla., 23 grazing leases on the Osage Reservation and 3 on the Kaw, for three years from April 1, 1898; total acreage, 497,229 acres; annual rental, \$49,720.

Ponca and Otoe Reservation, Okla., 6 grazing leases on Ponca and 4 on Otoe Reservation, for three years from April 1, 1898, 155,478.34 acres, annual rental of \$10,429.60.

Eastern Shawnee Reservation, Ind. T., 2 mining leases for five years and 1 grazing lease for three years; consideration, 10 per cent of products mined and \$4.80 per annum for grazing.

Uintah Valley Reservation, Utah, 1 grazing lease for fifteen months, at \$7,100 per annum.

Leases of allotted lands have been made as follows:

Agency.	Kind of lease.	No.	Years.	Rate.
Cheyenne and Arapahoe, Okla.	Grazing and farming.	98	3	15 cents to \$1 per acre per annum.
Oneldas, Wis	Farming	1	1	\$2.50 per acre for 40 acres.
Fond du Lac Chippewas, Wis..	Gravel pits	2	3	\$75 and \$85.
Nes Perces, Idaho	Farming and grazing.	74	1 to 3	\$1 to \$2.50 per acre per annum.
Do.....	Business.....	3	3	\$60, \$240, and \$120 per annum.
Omahas, Nebr	Farming and grazing.	206	1 to 3	25 cents to \$2.50 per acre per annum.
Winnebagoes, Nebr.....	.....do	137	1 to 3	Do.
Puyallups, Wash .....	.....do	7	2	\$1.97 to \$10 per acre per annum.
Poncas, Pawnees, Otoes, and Tonkawas, Okla.	.....do	152	3	50 cents to \$1.25 per acre per annum.
Eastern Shawnees, Ind. T.....	.....do	2	1 to 3	\$1.50 to \$2 per acre per annum.
Senecas, Ind. T .....	.....do	4	1 to 3	Do.
Wyandottes, Ind. T.....	.....do	1	1 to 3	Do.
Modocs, Ind. T.....	Mining	1	5	10 per cent of minerals mined.
Absentee Shawnees, Ind. T....	Farming and grazing.	63	1 to 3	15 cents to \$3 per acre per annum.
Pottawatomies, Ind. T.....	.....do	49	1 to 3	Do.
Sac and Fox, Ind. T.....	.....do	55	1 to 3	Do.
Iowas, Ind. T.....	.....do	16	1 to 3	Do.
Kickapoos, Ind. T .....	.....do	33	1 to 3	Do.
Sac and Fox, Ind. T.....	Business.....	3	3	\$5, \$12.50, and \$20 per annum.
Santee Sioux, Nebr	Farming and grazing.	3	3	31½ cents per acre per annum.
Siasseton Sioux, S. Dak.....	.....do		3	Do.
Umatillas, Oreg.....	.....do	4	2 and 3	\$1.25 to \$2 per acre per annum.
Walla Wallas, Oreg.....	.....do	9	2 and 3	Do.
Cayuses, Oreg .....	.....do	7	2 and 3	Do.
Yakima, Wash.....	.....do	10	3	25 cents to \$1.35 per acre per annum.
Yankton, S. Dak.....	Grazing	9	3	10 cents per acre per annum.

INDIANS AT THE KIOWA AGENCY, OKLA.

The Indians at this agency, as regards their finances, may be divided into two groups, one composed of the Apaches, Kiowas, and Comanches, and the other of the Wichitas, Caddos, Keechies, Delawares, Towaconies, and Wacos, known as the Wichitas and affiliated tribes. The former numbers 2,870 and the latter 960. Both have distinct revenues as well as revenues in common.

Until the present year, the Apaches, Kiowas, and Comanches have had a treaty with the United States, under which has been appropriated annually for thirty years \$30,000, to be expended in the purchase of such articles as their condition and necessities required. Under the same treaty, they have been provided with clothing and also a physi-

cian, teacher, carpenter, and other employees, for which Congress has, from time to time, made the necessary appropriations. For 1898 the appropriation for clothing was \$10,000 and for employees \$6,700. This treaty expired with the fiscal year 1898, and in consequence their income for 1899 is that much less.

The Apaches, Kiowas, and Comanches of late years have had a large income from grazing leases. From that source the income for the year 1898 was \$111,362.57, and for 1899 it will be \$192,287.92, an increase of \$80,925.35.

The Wichitas and affiliated bands have no treaty, and therefore have no income from that source. They have, however, an income from grazing privileges, which in 1898 amounted to \$1,491.01, and for 1899 it will be \$13,045.81, an increase of \$11,554.80.

In addition to funds from other sources, Congress has been making annually for years an appropriation, as a gratuity, for the support and civilization of all the Indians of the Kiowa Agency. For 1898 it was \$100,000, and it is the same for 1899.

Recapitulating, under the proper titles of appropriations, the income of these tribes for the two fiscal years 1898 and 1899 may be stated as follows:

1898.

APACHES, KIWAS, AND COMANCHES.

Fulfilling treaty with Apaches, Kiowas, and Comanches.....	\$30,000.00
Support of Apaches, Kiowas, and Comanches, clothing, 1898.....	10,000.00
Support of Apaches, Kiowas, and Comanches, employees, 1898.....	6,700.00
Indian moneys, proceeds of labor (grazing money).....	111,362.57
	<hr/>
	158,062.57

WICHITAS AND AFFILIATED BANDS.

Indian moneys, proceeds of labor (grazing money)	1,491.01
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ALL OF THE TRIBES.

Support of Apaches, Kiowas, Comanches, Wichitas, and affiliated bands.	100,000.00
Total	<hr/>
	259,553.58

1899.

APACHES, KIWAS AND COMANCHES.

Indian moneys, proceeds of labor (grazing money).....	\$192,287.92
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WICHITAS AND AFFILIATED BANDS.

Indian moneys, proceeds of labor (grazing money).....	13,045.81
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ALL OF THE TRIBES.

Support of Apaches, Kiowas and Comanches, Wichitas and affiliated bands.....	100,000.00
	<hr/>
	\$305,333.73

Comparing the two years, we have a total income for 1898 of \$259,553.58, and a total income for 1899 of \$305,333.73, making a difference in favor of 1899 of \$45,780.15.

As above stated, the \$100,000 appropriated as a gratuity is for the benefit of all the Indians on the reservation, both the Apaches, Kiowas, and Comanches, and the Wichitas and Affiliated Bands. This gratuity being the same in 1898 and 1899, and as each group receives an equitable share, it may be disregarded in making comparisons. The separate income of each group may, therefore, be stated as follows:

Apaches, Kiowas, and Comanches.

Income for fiscal year 1899	\$192, 287. 92
Income for fiscal year 1898	158, 062. 57
Excess of 1899 over 1898	<u>\$34, 225. 35</u>

Wichitas and Affiliated Bands.

Income for fiscal year 1899	\$13, 045. 81
Income for fiscal year 1898	1, 491. 01
Excess of 1899 over 1898	<u>\$11, 554. 80</u>

From the foregoing it will be seen that while the income of the Apaches, Kiowas, and Comanches has been diminished to the extent of \$46,700 by the expiration of their treaty, the decrease has been more than made up by the large increase in their grazing fund; and that the Wichitas and affiliated bands have suffered no loss, but, on the contrary, have had their income very largely increased.

With respect to their annuities and subsistence supplies, the Indians of the Kiowa Agency are not receiving as much in 1899 as they received in 1898. The usual amount of clothing for the Apaches, Kiowas, and Comanches was not bought this year, because the treaty provision for that purpose expired in 1898, and for the same reason the usual quantity of subsistence was not allowed.

In anticipation of the loss of \$46,700 by the expiration of the Apache, Kiowa, and Comanche treaty, but evidently misunderstanding the amount of revenue that would be available for this agency, the acting Indian agent, in making his annual estimate last January for the current fiscal year, materially reduced the quantity of subsistence supplies, more so than the situation demanded. The Commissioner of Indian Affairs did not increase the agent's estimate when contracts were made in the spring of this year, because, while anticipated, the large increase in grazing funds was not then certain. The result was a large reduction in the quantity of subsistence supplies purchased for 1899 as compared with 1898. Additional quantities have been called for by the Indian agent, however, which will be furnished.

The subsistence articles furnished for issue to these Indians are bacon, beans, beef (gross), coffee, flour, coarse salt, and sugar. The value of these articles furnished the Kiowa Indians for 1898 approximated

\$87,820; the value of the same articles for 1899 approximates \$52,342—a decrease from 1898 of \$35,478. The value of the clothing furnished the Apaches, Kiowas, and Comanches for 1898 was \$9,320, and the value of that furnished the Wichitas and affiliated bands was about \$3,860—so that in the two items of subsistence and clothing the Indians receive \$48,658 less than last year. But while they receive less in certain goods and supplies, they receive more than an equivalent in cash.

In the fiscal year 1898 there was paid to the Apaches, Kiowas, and Comanches in cash \$30 per capita of their grazing money, the aggregate of which was \$86,100. A payment is to be made in the near future of \$40 per capita from the same fund, and there will be enough remaining to make another payment in the spring of probably \$30 per capita—a total of \$70 in this present year, which will aggregate a payment to the tribes of \$200,900.

The Wichitas, etc., received no per capita payment last year from their grass money. It is now proposed to make them a payment of \$8 per capita, and there will be enough remaining to make them a \$3 payment in the spring, a total per capita of \$11, the aggregate of which will be \$10,560.

Thus it appears that while the Indians of the Kiowa Agency received in cash only \$86,100 last year, they will receive in all probability \$211,460 this year.

Comparing the two years with respect to the matters under discussion, the situation is as follows:

1899.

Value of subsistence supplies furnished and to be furnished.....	\$52,342	
Cash payments to Apaches, Kiowas, and Comanches.....	200,900	
Cash payments to Wichitas and Affiliated Bands.....	10,560	
		<hr/> 263,802

1898.

Value of subsistence supplies furnished	87,820	
Value of clothing, Apaches, Kiowas, and Comanches.....	9,320	
Value of clothing, Wichitas and Affiliated Bands	3,860	
Cash payment.....	86,100	
		<hr/> 187,100
Difference in favor of 1899.....		<hr/> 76,702

There have been other expenditures for these Indians in the way of employees, agricultural implements, hardware, etc., which, while they might affect these latter figures somewhat, would not materially change the general result. They are not discussed here, the purpose being simply to show that these Indians are in a better condition, financially, than they were last year, and that whatever reductions have been made in rations or annuities will be more than offset by payments in cash.

INDIAN LANDS TO MISSIONARY SOCIETIES.—During the year nine tracts upon Indian reservations have been set apart for the use of mis-

sionary societies in their religious and educational work among Indians. The tracts vary in size from half an acre to a quarter section.

RAILROADS ACROSS RESERVATIONS.—Rights of way have been granted railroads as follows:

Nebraska, Kansas and Gulf, through Indian and Oklahoma Territories.

Denison, Bonham and New Orleans, through Indian and Oklahoma Territories.

Missouri, Kansas and Texas, in Oklahoma, to restore the channel of the South Canadian River.

Kansas, Oklahoma and Gulf, through Chilocco school reserve, Oklahoma.

Omaha Northern, through Omaha and Winnebago Reservations.

Kettle River Valley, through Colville Reservation.

Washington Improvement and Development Company, through Colville Reserve.

The status of rights of way previously granted and referred to in previous reports are given in detail by the Commissioner.

INDIAN DEPREDAATION CLAIMS.—Out of the 8,007 Indian depredation claims of record in the Indian Bureau 4,260 are yet to be disposed of. By the act of July 7, 1898, \$331,771.55 were appropriated for payment of judgments rendered by the Court of Claims, which, with previous appropriations, make a total of \$1,452,451.84 that have been appropriated for that purpose. A few small judgments have been paid from tribal funds.

At the last session of Congress House bill No. 6712 was introduced, which proposed to admit to adjudication three classes of claims which under existing law are barred. Claims for the property of any "inhabitant" instead of citizen; claims for property "damaged" as well as destroyed, and claims against Indians not "in amity" as well as friendly Indians. If this bill were to become a law it would reopen many cases which have been disallowed, and under it, at this late date, the Indians would suffer much greater injustice than the claimants are likely to suffer under the law which is now in force. Moreover, it would take millions from the United States Treasury to pay claims of which no small number would be questionable.

ASSAULT UPON NAVAJOES.—Reports have been received from the acting agent of the Navajoes, the United States district attorney for Arizona, and the governor of Arizona in regard to the forcible ejection last year of 16 Navajo families from the Grand Canyon National Park and its vicinity, by which the Indians suffered the loss of their cattle and sheep. The Arizona officials claim that no harm was done to the Indians either in person or property, while the agent maintains that they suffered heavily. The agent's statement is probably nearer the truth, and the Navajoes are fairly entitled to compensation for their losses.

MISSION INDIANS, CALIFORNIA.—No new allotments have been made, and the completion of allotments on three reserves still awaits the furnishing of survey plats by the Land Office. The proposed exchange of lands with the Southern Pacific Railroad is also still before the Land Office. The Mission Indian Commission failed to

select for some of the Indians the land which they were at that time occupying. A draft of a bill was sent to the Senate which authorizes the patenting to the Mission Indians of such tracts not selected by the commission as they now occupy and need.

KILLING OF UTES IN COLORADO.—On the 24th day of October, 1897, when a party of Ute Indians from the Uintah and Ouray Reservation in Utah were hunting on the north side of Snake River, in Colorado, two of them were killed and two were wounded by a squad of game wardens of Colorado. Immediately the newspapers contained the usual startling accounts of an Indian outbreak. Troops at Fort Duchesne were called on to suppress any hostile demonstrations which the White River Utes might be disposed to make, and Special Agent E. B. Reynolds was sent out to ascertain the facts. He took the testimony of most of the Indians and white men connected with the affair. That of the white men was to the effect that the game warden of Routt County had been notified by the chief game warden of Colorado that Indians were killing game in violation of law, and should be arrested unless they left the State.

A force of ten wardens, all but two armed, and two other men started for the Indian camp, sending two of their number ahead to try and induce the Indians to come to Thompson's ranch for a talk. En route two Indians were met, one of whom was taken and disarmed. Arriving at the camp at 10 a. m., they found six men, eight or ten women, and a few children. The Indians were notified that they must leave the State or be arrested. After some time attempt was made to disarm and arrest them, which the Indians resisted. Then, to quote from the report of the special agent:

In the final attempt to arrest the Indians, an Indian, unexpectedly to all, fired his gun at one of the wardens, Al. Shaw, and as he was about to fire, a warden, Mr. Kimberly, standing near Shaw, struck the gun to one side, and the shot missed Shaw and hit a woman. At this moment the firing was commenced by the wardens and lasted but a few minutes, and when it had ceased it was found that some Indians had been killed and some wounded, and Shaw was lying on the ground in a senseless condition, having been stricken down by the Indian who had fired the first shot. The wardens then went away to Thompson's ranch.

The Indians claim that after arrival at the camp with the disarmed Indians the wardens immediately covered the others with their rifles and endeavored to arrest some of them, who resisted and got away. In the afternoon the wardens commenced firing on the Indians, and after killing two men and two women left the camp.

The wardens deny that they fired the first shot or that they drew their rifles on the Indians before the firing commenced, and on the whole the special agent is inclined to accept their version of the affair as against that of the Indians, and to acquit the posse of anything deliberate or malicious in the killing.

This is the old hunting ground of the Utes, and they find it hard to understand why their right to hunt there, guaranteed by their treaty,

should be interfered with by State law. Under the Supreme Court decision that the admission of a State into the Union annuls such treaty rights the Indians could undoubtedly be held by the Colorado officials to be violating the game laws.

SOUTHERN UTEs IN COLORADO.—Irrigating ditches for allotted lands are nearly completed. For the irrigation of the unallotted tract the Montezuma Valley Canal Company made a proposition last November which was submitted to Congress, and is contained, with report of inspector, in Senate Executive Document 154, Fifty-fifth Congress, second session. Under an item in the last Indian appropriation act an investigation is being made by the Geological Survey as to the irrigation outlook for those lands.

SEMINOLES IN FLORIDA.—There are supposed to be from 400 to 600 Seminole Indians or descendants of Seminoles, in Florida, who refused to assent to the treaty of May 9, 1832, by which the tribe consented to move to the Indian Territory. The tribe, by the terms of the treaty, renounced all claim to its rights in Florida, receiving therefor lands in the Indian Territory. The descendants of the remnant remaining in Florida have no legal rights in that State, but their condition appeals to one's humanity.

In 1888 an attempt was made to locate them in Florida under the provisions of the homestead act. The attempt failed, as no vacant lands suitable for the purpose could be found in that State, and no provision had been made for the purchase of the lands desired, upon which they lived.

In 1893 the Women's National Indian Association initiated its pioneer work for the benefit of these people and established missions among them. The Government secured 80 acres of land upon which a mill house, barn, school house, and other buildings were erected, and the State of Florida voted 5,000 acres for these Indians, but it does not appear that these lands were ever selected by the State.

By a clause in the Indian appropriation act of August 5, 1894, the sum of \$6,000 was appropriated for the Seminoles in Florida, "one-half of which sum shall be expended by the Commissioner of Indian Affairs in procuring permanent homes for said Indians."

Subsequent acts contained similar provisions, and purchases to the extent of fourteen sections of land have been made, at a cost of \$6,258.86.

On the 31st of January, 1898, the Assistant Attorney-General for this Department rendered an opinion to the effect that certain tracts of land in the Everglades of Florida occupied by the Seminole Indians, and other tracts in the same vicinity, which are not actually swamp and overflowed, but which are embraced in the swamp and overflowed land grant to the State of Florida, could lawfully be excepted by the Secretary of the Interior from the patent to be issued for the said swamp grant to the State of Florida, and reserved to the Seminole Indians.

With a view to making provision for the settlement of these Indians on unappropriated lands before all such lands are taken up by the rapidly increasing population of the State, I directed Indian Inspector A. J. Duncan to go to Florida for the purpose of ascertaining what lands could be secured, and to consult with the authorities of the State and others, as to the proper course to be pursued under the circumstances.

Mr. Duncan made two trips to Florida and has prepared valuable reports, which are hereto appended. (Exhibit G.)

It is believed that certain lands the title to which is still in the United States Government can be assigned to these people.

OSAGE ANNUITY ROLL CONTESTED CASES.—In 1895 the Osages complained that names had been fraudulently placed upon their annuity roll and asked an investigation, to be paid for from their funds. On being told that the challenged names must first be furnished, with charges and reasons, a list of 446 names was submitted. A commission to investigate was appointed, consisting of Washington J. Houston and George Y. Scott, who were instructed February 20, 1896, that they should not consider names admitted on the roll prior to January 1, 1888, but the date was afterwards set at January 1, 1880. This change added 82 to the list, making it 528 names. Both commissioners reported 296 names as thrown out because they had been enrolled prior to January 1, 1880; 80 as belonging on the roll, their rights as Osages being proved, and 5 as erroneously entered on the list. The 147 remaining names Mr. Houston reported as without evidence to sustain their enrollment, 5 being children of white men married to Indians after 1888; but Mr. Scott reported 68 of them as entitled to remain on the roll and 74 as without evidence to sustain their enrollment, and made no report as to the children of white men. On examination of the testimony and evidence the Indian Office recommended that 140 names be retained on the roll, while the Assistant Attorney-General, to whom the case was afterwards referred, found 207 entitled to remain. The acting agent for the Osages was instructed July 12, 1898, in accordance with this final decision.

INTRUDERS IN THE INDIAN TERRITORY.—The last Indian act authorizes appeals in all citizenship controversies in the Five Civilized Tribes from the courts in the Indian Territory direct to the Supreme Court of the United States. This disposes of the main complication of the intruder question, and the rest of it will doubtless be disposed of, without recourse to removal of intruders, by the modifications of tribal affairs which will come through the Curtis Act.

SALE OF PEORIA AND MIAMI LANDS.—Under the act of June 7, 1897, authorizing the Peoria and Miami allottees to sell 100 acres from their allotments of 200 acres or over, the Peorias have made 32 conveyances of land, amounting to 2,684.57 acres, for \$27,653.90, and the Miamis have made 16 conveyances, amounting to 1,411.05 acres, for \$12,505.

TITLE OF LANDS PURCHASED BY SACS AND FOXES IN IOWA.—In January, 1896, the legislature of Iowa ceded to the United States jurisdiction over the Iowa Indians and their land, which was accepted by the United States by the Indian appropriation act of June 10, 1896. The records of the Indian Office showed that 16 tracts of land had been purchased by the Sacs and Foxes between 1876 and 1892, aggregating 2,480.075 acres. Examination of the books of Tama County, Iowa, disclosed the record of 30 more deeds conveying 17 other tracts to the Sacs and Foxes. Within these lands are 8 small tracts owned by whites, containing about 50 acres, which should be purchased for the Indians.

One of the deeds, instead of being made out to the tribe, is made to five Indians and their heirs, although the 80 acres were bought for the tribe. The Indians were notified that to quiet title in the tribe a suit must be entered to change title to the tribe, but they were unwilling to incur the expense of the suit from tribal funds. Through the Department of Justice, the United States attorney for the northern district of Iowa has been requested to enter suit.

ATTACK BY PAPAGOES ON EL PLOMO, MEXICO.—Last April it was reported through the State Department that some Papagoes from the United States had attacked the village of El Plomo, Mexico. The Pima agent reported, May 11, that no one had been killed or wounded in that attack, which had been made by some Sonora Indians, who, having fled to the American side the year before, had returned to their old home to recover their stock left there. The Mexicans fired on them and again they fled, leaving their stock behind. May 27, Inspector Nesler reported that he had 25 of the Papagoes in custody, of whom 4 ringleaders would be held for trial for violation of the provisions of section 5286, Revised Statutes United States, which would be sufficient punishment. The other 21 were sent to the Pima Agency and were released on parole last June and July. The 4 are still in the custody of the Pima Agency.

NORTHERN CHEYENNE RESERVATION, MONT.—The Indian appropriation act of July 1, 1898, provides that an inspector shall report as to the feasibility of removing the Northern Cheyennes to the Crow Reservation, the names of white settlers on the Northern Cheyenne Reservation, with the amount of land occupied and improvements made by them, the subject of fencing the reservation, and the amount of pasturage available thereon. He may negotiate with settlers legally on the reservation for the sale of their land and improvements. Inspector McLaughlin has been assigned to this duty and received instructions.

PUEBLOS IN NEW MEXICO.—The Zuñi pueblo was granted to its inhabitants by Spain in 1680, but there appears to have been no approval of the grant by the Department of Congress, and no patent has ever been issued. There seems to be no way to confirm the title to the Indians except by act of Congress confirming the claim outright or permitting suit to be brought against the United States in the Court of Private Land Claims. The Commissioner presents a transcript of

records of the grant found in the office of the surveyor-general of New Mexico.

Five of the principal men engaged last year in the hanging of a so-called witch in the Zuñi pueblo have been indicted. In February last the United States attorney for New Mexico reported that four were then in the Los Lunas jail, and warrant had been issued for the other, but their trial could not come off until September.

Under a provision in the last appropriation act, Mr. George Hill Howard, of Santa Fe, has been made counsel for the several pueblos in their land and other matters.

PYRAMID LAKE INDIANS, NEVADA.—The last Indian appropriation act authorizes the town of Wadsworth on the Pyramid Lake Reservation to acquire title to its town site under section 2382, Revised Statutes, relating to town sites on public lands. The proceeds of the sale of the land in the town site is to be placed to the credit of the Pyramid Lake Pi-Utes, and Indians residing in the town and in possession of lots with improvements shall have the same rights of purchase as white men. The 110 acres on which the Pyramid Lake school is located is reserved from the town site, except so much as may, in the judgment of the Secretary of the Interior, not be needed by the school.

INDIANS IN NEW YORK.—No change has been made in the condition or political status of the New York Indians during the past year. The claim of the Ogden Land Company still exists, with no apparent prospect of its being soon settled.

A petition, numerously signed by the Indians, to have the New York legislature amend the laws so as to give litigants in property matters the right to appeal from the Peacemakers' courts to the State courts was transmitted to the governor of the State of New York.

During the year the Seneca Nation of New York Indians had a bill introduced in Congress, the purpose of which was to have all lease moneys due from the leasing of town lots in the six villages of the Allegany Reservation collected by the United States Indian agent. This bill passed the Senate and is now pending in the House.

Under the treaty of 1838 a reservation was set apart in Kansas for these Indians. The reservation was never occupied by them, and has been sold by the Government and the proceeds thereof placed in the Treasury of the United States.

The Indians presented to Congress a claim against the United States to recover the value of said lands, estimated at \$2,393,600, and the claim was referred by Congress to the Court of Claims for adjudication, with right of appeal to the Supreme Court.

In 1896 the Court of Claims dismissed the petition of the Indians, from which decision the Indians appealed to the Supreme Court.

In the May term of this year the Supreme Court reversed the judgment of the Court of Claims, remanding the case with "instruction to enter a new judgment for the net amount actually received by the

Government for the Kansas lands, without interest, less any increase in value attributable to the fact that certain of these lands were donated for public purposes, as well as the net amount which the court below may find could have been obtained for the lands otherwise disposed of, if they had all been sold as public lands, less the amount of lands upon the basis of which settlement was made with the Tonawandas, and less 10,240 acres allotted to the 32 New York Indians, as set forth in finding 12, together with such other deductions as may seem to the court below to be just, and for such other proceedings as may be necessary and in conformity with this opinion."

On November 14, 1898, judgment was rendered by the Court of Claims, on mandate of the United States Supreme Court, in favor of the Indians for \$1,961,400.

TORTURING AND BURNING OF SEMINOLES IN OKLAHOMA.—Early in January last Mrs. Laird, a white woman, was brutally murdered in a shocking manner near the village of Maud, in Pottawatomie County, Okla., adjacent to the line of the Seminole Nation. Shortly afterwards a mob collected and seized two Seminole Indians, named Lincoln McGeesy and Palmer Martin, and put them to death by burning, as the perpetrators of the murder of Mrs. Laird.

Upon receipt of information of this great crime, Governor Barnes, of Oklahoma, was at once directed by telegraph to cooperate with the officials of the Indian Department and the Department of Justice to quiet all disturbances, and arrest and bring to justice all parties guilty of violation of the law on either side. As it appeared from the reports that there was danger of an uprising of the Indians because of their belief that the boys who had been so cruelly and unlawfully put to death were innocent of the murder of Mrs. Laird, on the same day a telegram was sent to the Secretary of War requesting that a sufficient force of troops be immediately sent to Wewoka, in the Seminole Nation, and to such points on the border between that Nation and Oklahoma as might be deemed necessary to preserve the peace and protect life and property.

To the latter dispatch the Secretary of War made prompt response, but before troops could be moved further information was received giving assurance that their presence on the ground was unnecessary. Governor Barnes of Oklahoma was also prompt and energetic, and even before the receipt of Department telegram to him had taken vigorous steps to ferret out the perpetrators of the crime committed upon the two boys and to bring them to justice. He offered a reward of \$1,000 for their arrest and conviction, which was the largest reward authorized by the laws of the Territory.

It is believed that the mob embraced nearly all the white people of that neighborhood and numbered about 300 persons, and as they were all interested in shielding themselves, as well as their neighbors, it was extremely difficult to get any information that would lead to their identification. The Indian agent and his clerks and the Indian police, as

well as the officials of the Department of Justice, have striven diligently to ferret them out, but without satisfactory results. It is understood that a few indictments have been found, but no advice has been received as to the strength of the proof upon which they are based, or as to the probabilities of conviction. The crime, however, was a monstrous one, and the perpetrators ought not to go unpunished. All reports now seem to agree that one of the victims, Lincoln McGeesy, a young married man of respectable family, was innocent of the crime with which he was charged—the murder of Mrs. Laird—and that the guilt of the other, Palmer Martin, has never been proven, and that it is by no means certain that he was guilty.

By the act of Congress approved July 1, 1898 (30 Stat., 597, 625), making appropriations for sundry civil expenses of the Government for the next fiscal year, it is provided that—

To enable the Secretary of the Interior to cause an examination and investigation to be made of outrages and injuries alleged to have been perpetrated on individual Indians belonging to the Seminole tribe by an armed mob or band of lawless persons who invaded the Seminole country during the months of December, eighteen hundred and ninety-seven, and January, eighteen hundred and ninety-eight, if upon such examination and investigation it shall appear that outrages and injuries have been so perpetrated and that the United States is under treaty obligations to pay for such outrages and injuries, he shall ascertain the amount which should be properly paid such Indian or Indians or their legal heirs or representatives, and pay such sum or sums as he may deem just and reasonable, and for such purpose a sum not exceeding twenty thousand dollars is hereby appropriated.

The United States Indian inspector for the Indian Territory has been directed to make inquiry touching the injuries alleged to have been perpetrated upon the Indians belonging to the Seminole tribe, and as soon as his report has been received action will be taken thereon by the Department, in accordance with the requirements of the act above quoted.

BOUNDARY OF KLAMATH RESERVATION, OREG.—On account of an erroneous survey of their boundary lines a commission in 1896 recommended that the Klamath Indians be compensated by payment of \$532,270. Instead of that, Congress at its last session provided for a resurvey of the boundary according to the treaty of 1864, and authorized an inspector to negotiate with the Indians in regard to all reservation matters (including the relinquishment of a part of their reserve), and to ascertain what portion thereof is occupied by United States citizens and by what right. Negotiations will await the resurvey of the boundaries by the General Land Office.

TURTLE MOUNTAIN CHIPPEWAS, NORTH DAKOTA.—The agreement concluded with them in 1892 is still unratified. House bill 8292 is pending, which refers to the Court of Claims the claims of these Chippewas for payment for 9,000,000 acres in North Dakota, which they insist have never been ceded by them.

DANIEL PULLEN AND THE QUILLEHUTE RESERVE, WASH.—After

a contest of several years it has finally been decided that one Daniel Pullen has no right to the land on the Quillehute Reservation which he has been occupying; but when the Neah Bay agent attempted to put the Indians in possession of their land Mr. Pullen sued out a writ of injunction to restrain the agent from removing him from the reservation. April 30 last the injunction was dissolved. The Washington Fur Company was involved in the case of Pullen, and its rights on the reservation were also passed upon in determining the rights of Mr. Pullen by departmental decision of March 1, 1893. (Public Land Decisions, vol. 16, p. 210 et seq.) June 24 the agent reported that the removal of the personal effects of Mr. Pullen had been accomplished, but that the Washington Fur Company would need considerable time in which to remove their property. Ample time was allowed them. In July Sutcliffe Baxter, receiver of the Washington Fur Company, had a restraining order served upon the agent, to which he prepared a demurrer, which the court sustained, but it also allowed the complainant thirty days in which to file a new petition.

Stockbridges and Munsees in Wisconsin.—Certain tracts allotted to Indians in the Stockbridge and Munsee reservations having been claimed by the State of Wisconsin under the swamp-land act, Senate bill 3094 has been introduced and is pending in Congress, which proposes the relinquishment by the State of all swamp lands within Indian reservations in exchange for other lands to be granted the State.

SALE OF CITIZEN POTTAWATOMIE AND ABSENTEE SHAWNEE LANDS.—During the past year, with Department approval, these Indians have disposed of 10,655.46 acres, for \$54,679.68, ninety-five conveyances having been made by the Pottawatomies at an average price of \$4.71 per acre, and twenty-five by the Absentee Shawnees at an average of \$6.98 per acre. The total sales of lands by these two tribes of Indians since the passage of the act of August 15, 1894, are 378, aggregating 40,093.51 acres of land, for \$229,461.77. Great difficulty has been experienced in preventing the Indians from being defrauded of more or less of the purchase money.

The act of May 23, 1872, provides that Pottawatomie lands shall be alienable only to the United States or to Indians. Such restrictions should be removed, and those allottees should be allowed the same privileges as are accorded those who took allotments under the general allotment act.

SALE OF LIQUOR TO INDIANS.—The investigation of Special Agent R. J. W. Brewster, of the Department of Justice, into sales of intoxicating liquors to Indians have disclosed bold violations of law, and have resulted in the arrest and conviction of many offenders. At Round Valley, Cal., seven liquor sellers were arrested and five convicted and punished. Near Nez Perce Agency, Idaho, some were arrested and others against whom warrants had been issued fled the

country. Towns in the Chickasaw Nation, Ind. Ter., were found to be infested with liquor saloons, and several liquor sellers have been sent to the penitentiary. At Ardmore 206 barrels of bottled beer were seized. At Purcell it was not uncommon for officers of the court to be intoxicated.

One Indian died and two others lost their sight from drinking lemon extract purchased near Devils Lake Agency, N. Dak. Subsequent chemical analysis showed that methyl alcohol was used in the manufacture of the extract.

CREEK WARRANTS.—The Indian appropriation act approved June 7, 1897, required the Secretary of the Interior to disburse the sum of \$333,000 of the permanent fund of the Creek Nation in the Treasury of the United States in the payment of the debts of the Creek Nation, provided he found upon investigation that the debts were incurred, or the warrants representing the same were issued, for full and valuable consideration, and that there was no fraud in the incurring of the debts or the issue of the warrants.

In my last annual report it was stated that in pursuance of this authority two special inspectors had been sent to the Creek Nation to investigate the debt and the warrants in question, and that their report showed that warrants aggregating \$352,243.16 had been issued by the Creek Nation and were then outstanding. It was also stated that the proof showed that \$93,704.93 of the sum above named had been fraudulently issued by certain officials of the Creek Nation, who had conspired together for that purpose, and that it had not been satisfactorily shown that there was no fraud in the creation of the debt or the issue of the remainder of the warrants, amounting to \$258,538.23, and it was said that they would not be paid until the present holders had proven them free from any taint of fraud.

Subsequently, upon further and very careful and thorough investigation made by the said special inspectors, it was conclusively shown that the \$258,538.23 of warrants were free from fraud, both in their issue and in the creation of the debt which they represented, and in April, 1898, Agent Wisdom, of the Union Agency, was directed to pay them, and money deposited to his credit for that purpose.

On the 13th of April he reported that he had made payment to the amount of \$253,022.63, and turned back into the Treasury \$5,515.61 upon warrants called in question during the payment, or for which no warrants were presented.

Here the matter rested until the passage of the Indian appropriation act approved July 1, 1898. Section 11 of this act provides as follows:

That the Secretary of the Interior is hereby directed to pay out of the appropriation of the Act of Congress of June seventh, eighteen hundred and ninety-seven, such of the Creek warrants as are proven to be held by innocent holders who acquired them in good faith, for value and without knowledge, actual or constructive, of irregularity or fraud in the issuance thereof, and such warrants shall upon pay-

ment be cancelled by the Secretary of the Interior; and all the warrants so issued by said Creek Nation shall be presented to the Secretary of the Interior within ninety days from the passage of this Act, and all warrants not so presented are hereby declared null and void, and such warrants so presented which are not proven to have been issued or acquired in good faith for value and without knowledge, actual or constructive, of irregularity or fraud in the issuance thereof, shall be held by the Secretary and marked upon their face "fraudulent and void."

Pursuant to this provision, one of the special inspectors above referred to was dispatched to the Indian Territory in July last to take testimony. Upon his report, the proof taken by him, and the evidence submitted by the holders of the warrants, it was conclusively shown that the warrants were owned by innocent holders, who had acquired them in good faith for value, and without knowledge, actual or constructive, of irregularity or fraud in the issuance thereof. Upon this finding payments of these fraudulent warrants have been made to the amount of \$73,344.18. No others were presented, and it is understood that all of the remainder have been paid and canceled by the authorities of the Creek Nation. Thus the losses resulting from these fraudulent warrants have fallen upon the Creek Nation, and perhaps rightfully, as it has been clearly shown by proof that they were issued by the duly constituted authorities of that nation, and without the knowledge or connivance of any other persons who have received payment from the Government.

The perpetrators of this fraud, several in number, have been indicted and are on bail, awaiting trial in the United States court, except one who has since died, and one who fled the country before being arrested, the latter, it is understood, has never been apprehended.

APACHE PRISONERS OF WAR.—Through the courtesy of the honorable Secretary of War a copy of the annual report of Lieut. F. H. Beach, in charge of the Apache prisoners of war at Fort Sill, Okla., has been received.

The number of these prisoners, men, women, and children, is 298, one less than last year. Their health has generally been good, though some of them have suffered from malaria and some from tuberculosis. Their principal industry is stock raising, and this year they have 1,785 head of cattle, an increase of 333 head over last year. The reservation set apart for their use is well adapted to grazing, and it is Lieutenant Beach's plan to fence the entire reservation, so as to prevent loss of cattle by drifting, as well as to protect their range from intruding cattle from the outside. This year they have furnished 640 tons of hay to the quartermaster at Fort Sill, for which they received \$5.11 per ton, aggregating \$3,281.59, which was distributed among them in proportion to the labor performed, less \$684.06 paid for 8 mowing machines, 2 balers, 7 rakes, 1 loader, and 1 stacker, which they used through the season and which are still in good order for future use.

Each family has a farm of 10 acres, 1 acre of which is set apart for a vegetable garden, 1 acre for cotton, and 8 for kaffir corn.

Thirty-nine of their children are in St. Patrick's Mission at Anadarko. No school has been provided for their use, but one is very much needed

They are represented as peaceably disposed, their discipline excellent, and their progress during the year fairly satisfactory.

PENSIONS.

The office of the Commissioner of Pensions was created March 2, 1833, and placed under the supervision of the Secretary of War. It was transferred to the Interior Department in 1849.

The report of the Commissioner of Pensions shows that on the 30th of June, 1898, there were on the pension roll 993,714 names, an increase of 17,700 over the number on the rolls on the 30th day of June, 1897. Of these there are 12 widows and daughters of Revolutionary soldiers; 3 survivors of the war of 1812; 2,407 widows of soldiers of that war; 6,086 survivors and widows of Indian wars; 18,155 survivors and widows of the war with Mexico; 655 army nurses and 426,758 survivors, widows, children, and dependent parents and sisters and brothers of deceased soldiers and sailors, mostly of the war of the rebellion.

The latter number represents those pensioned on account of disabilities or death resulting from army or navy service. The number of persons remaining on the rolls June 30, 1898, who were pensioned under the act of June 27, 1890, which allows pensions for ninety days' service in the war of the rebellion on account of death and disability not chargeable to the service, was 539,638.

The number added to the rolls during the year was 64,351 (including 7,614 held in the Pension Bureau and not entered on the agency rolls until after July 1, 1897, for want of appropriation sufficient to make payments thereon); the number dropped from various causes (by death, remarriage, minors by legal limitation, failure to claim within three years, etc.), was 46,651, and the number of claims of various classes disallowed was 85,629. During the year 98,574 pension certificates were issued, of which 52,648 were for new or original pensions.

The amount appropriated by the act of December 22, 1896, for the payment of pensions for the fiscal year 1898 was \$140,000,000, of which \$136,000,000 was set aside for the payment of army pensions and \$4,000,000 for the payment of navy pensions; \$8,070,872.46 was appropriated by the act of March 31, 1898, to cover a deficiency in army pensions, and repayments in the sum of \$12,020.33 were made to the pension appropriation, making an aggregate of \$148,082,892.79 available for the payment of pensions during the fiscal year 1898.

The amount disbursed for army and navy pensions during the year was \$144,651,879.80, leaving a balance of \$3,431,012.99 unexpended on the 30th of June, 1898, which was covered into the Treasury. This unexpended balance would have been reduced in the sum of \$760,212.24, representing first payments on 5,581 cases, which were adjudi-

cated during the fiscal year, had it been possible to get them into the hands of the pension agents in time to make payments thereon prior to July 1, 1898.

The deficiency estimate (submitted to Congress in March, 1898) of \$8,070,872.46 was based upon an expenditure for Army pensions during the first six months of the fiscal year 1898 of \$72,082,618.24, and upon the probability that a like sum would be expended during the ensuing six months, together with an additional allowance of sufficient to provide for new cases added to the rolls.

The actual disbursements for pensions, however, during the second half of the fiscal year 1898, was but \$68,741,411.49, making the expenditures for Army pensions for that time \$3,341,206.75 less than were expended during the first half of the year 1898. No deficiency existed in the amount set aside for the payment of Navy pensions during the year.

The salaries and per diem expenses of the Pension Bureau amounted to \$2,683,212.54; the cost of disbursements and fees of examining surgeons (including \$223,363.41 balance due on account of medical examiners for last quarter of 1897) was \$1,430,878.92, making the gross expenditure on account of pensions, disbursements, office expenses, clerk hire, etc., \$148,765,971.26.

There are about 635,000 claims of all classes pending, of which 200,000 are original claims; the Commissioner states that the latter include many claims for increase or for additional allowance under another law. The claims remaining unsettled on June 30, 1898, exceed the number pending on June 30, 1897, by 56,960. During the year there were filed in the Bureau 165,442 claims, original and increase.

The "annual value" of the pension roll, that is, the amount of money required to pay one year's pension to the persons then on the rolls, at the rate or rates for which pensioned, was on the 30th of June, 1898, \$130,968,465, an increase over the previous year of \$1,173,037, indicating an increase in the value of the roll as well as the number of pensioners thereon.

The difference between the "annual value" of the pension roll at the close of the fiscal year and the amount actually expended for pensions during the year is chiefly accounted for by first payments.

The number of pensioners living in foreign countries at the close of the year was 4,371, to whom was paid \$669,862.56.

There were 389 names added to the rolls during the year by special acts passed at the second session Fifty-fifth Congress, making a total of 6,486 special acts passed by Congress since 1861.

A separate division has been organized for the adjudication of claims growing out of the war with Spain. These soldiers will receive their pensions under the general laws for disabilities of a permanent character contracted while in the service. Less than 100 claims had been filed up to the close of the fiscal year and none had been adjudicated.

The pension agencies have been located in public buildings so far as practicable. Reductions have been secured in rents for such agencies as are located in other than public buildings amounting to \$9,750. The work of the agencies is in the hands of competent officials, is well systematized, and payments are made very promptly.

An effort has been made to secure the proper execution of the quarterly vouchers upon which payments of pension are made. Inquiry disclosed the fact that many persons authorized to administer oaths in taking acknowledgments of pensioners' vouchers failed to require compliance with the law in the matter of identification of pensioners and the presentation of pension certificates by the pensioner at the time of taking such acknowledgments. Warning has been given such persons by calling attention to the specific requirements of the law, and it is hoped that the practices complained of will be discontinued without resorting to enforcement of the penalties as provided for in the act of July 7, 1898, amending section 4746, Revised Statutes United States.

The act of June 7, 1888, provides that the pensions of widows, in consequence of death occurring from a cause which originated in the service since March 4, 1861, shall commence from the date of the death of the husband. Up to the passage of this act the widow's pension commenced at the date of filing her application, if filed after June 30, 1880; hence, if a widow remarried without filing a claim, she had no pensionable status after her remarriage. Under existing laws pensions to soldiers commence at date of filing claim, if filed subsequent to June 30, 1880. A case is cited by the Commissioner where the widow of a soldier remarried long after the passage of the act of June 7, 1888, applied for a pension to date of remarriage, and received \$4,000; he also states that recently a claim was allowed dating back to 1857, and another was filed claiming pension from 1852.

The Commissioner expresses the opinion that the operation of this law is contrary to the spirit and intent of a just and generous recognition of the soldier's service, the widow's pension being intended to aid, assist, and comfort the soldier's widow during her widowhood.

The Commissioner calls attention to the fact that there are many men (pensioners) who are incapable of taking care of the generous bounty provided for them by the Government, and cites a case in which the first payment, amounting to \$4,500, was paid a pensioner who would have been better off with a smaller than a large pension, the latter leading to its dissipation and bringing trouble upon himself and those dependent upon him. He commends favorably the recommendation made by a former Commissioner (Gen. John C. Black), that the law be so altered and amended as to authorize the payment of pension to the wife of a pensioner, or to a suitable person in behalf of his children, in cases where the pensioner by reason of his habits is unfit to receive or disburse such pension.

The Commissioner reiterates the recommendation contained in his last annual report, that legislation be enacted so as to prohibit the granting of a pension to a widow who marries a soldier after the passage of the act of Congress authorizing the granting of pension. He also calls attention to the fact that since the passage of the general pension law of July 14, 1862, many laws, general and special, and many rulings and decisions interpreting the laws, have been rendered, until the system is a complex network of laws and legal opinions, and recommends the appointment of a commission to revise the pension laws and regulations governing the granting of pensions, in order to secure reliable, intelligent, and uniform practice in the future. In this recommendation I concur.

The Commissioner calls attention to the fact that the first, second, and third stories of the pension building are almost wholly used by the divisions of the office; that by reason of the overcrowding and accumulation of papers more room is absolutely necessary, and the removal of the office of the Commissioner of Railroads from the building is urged. He also states that the basement of the building can not be used for the storage of papers because of the dampness, and recommends an appropriation of \$5,000 to run an area from the west entrance of the building, and extending along the south side thereof to the eastern entrance, for the purpose of turning the surface water from the building, in which recommendation I concur.

Statement showing disbursements for pensions, fees of examining surgeons, cost of disbursement, salaries, and other expenses of the Pension Bureau, and number of pensioners on rolls each fiscal year since July 1, 1865.

Fiscal year.	Disbursements for pensions.		Fees of examining surgeons.		Cost of disbursement, maintaining pension agencies, etc.	Pension Bureau.		Number of pensioners on rolls.
	Army.	Navy.	Army.	Navy.		Salaries.	Other expenses.	
1866.....	\$15,158,598.64	\$291,251.24			\$155,000.00	\$237,105.00	\$15,000.00	124,723
1867.....	20,552,948.47	231,841.22			155,000.00	308,381.49	27,615.86	155,474
1868.....	23,811,183.75	290,325.61			155,000.00	300,186.20	31,834.14	169,643
1869.....	28,168,323.34	344,923.93			155,000.00	306,007.31	43,519.50	187,963
1870.....	29,043,237.00	308,251.78			216,212.86	333,640.00	51,125.00	198,636
1871.....	28,081,542.41	437,250.21			457,279.51	372,378.97	58,960.00	207,495
1872.....	29,276,921.02	475,825.79			456,323.99	436,315.71	57,557.78	232,189
1873.....	26,502,528.96	479,534.93			447,693.17	464,052.24	90,855.39	238,411
1874.....	29,603,159.24	603,619.75			444,074.79	464,821.21	75,045.72	236,341
1875.....	28,727,104.76	543,300.00			447,708.13	464,821.21	98,798.35	234,621
1876.....	27,411,309.53	524,900.00			455,370.05	445,262.08	67,102.78	232,137
1877.....	27,659,461.72	523,300.00			313,104.37	445,096.58	41,240.90	232,104
1878.....	26,251,725.91	534,283.53			203,851.24	439,255.70	54,088.70	232,908
1879.....	33,109,339.92	555,089.00			221,826.76	582,517.84	55,033.08	242,755
1880.....	56,901,670.42	787,558.86			222,295.00	636,565.45	46,403.19	250,802
1881.....	49,418,905.35	1,163,600.00			234,544.37	868,113.92	130,681.85	268,839
1882.....	58,928,192.05	964,960.00			285,020.29	1,723,285.08	241,555.53	285,007
1883.....	59,408,610.70	958,963.11			303,430.61	1,936,161.65	333,522.42	303,638
1884.....	56,943,115.25	907,272.23			294,724.14	1,948,285.80	511,492.12	322,786
1885.....	64,222,275.34	949,681.78			275,970.55	2,122,926.54	511,492.12	345,125
1886.....	53,034,642.90	949,681.78			248,280.42	1,968,509.63	430,195.91	345,125
1887.....	72,464,236.69	1,268,760.39			261,109.87	1,966,027.55	430,776.24	405,007
1888.....	77,712,789.27	1,237,712.40			278,907.20	1,978,119.98	424,654.50	452,567
1889.....	86,998,502.15	1,846,216.43			292,697.35	1,957,725.43	380,281.73	489,735
1890.....	103,808,250.39	2,285,000.00			390,300.14	2,301,721.90	377,600.74	537,944
1891.....	114,744,750.83	2,567,939.67			500,122.02	2,494,123.87	178,823.44	676,190
1892.....	135,914,611.76	3,470,535.35			519,292.95	2,400,044.50	230,703.07	876,008
1893.....	153,045,460.94	3,861,177.00			617,430.87	2,461,890.50	370,344.09	908,013
1894.....	136,405,905.61	2,490,760.56			563,449.86	2,403,522.75	504,912.52	909,544
1895.....	128,156,808.35	3,650,960.43			605,027.85	2,358,959.35	494,900.94	970,524
1896.....	134,612,175.68	3,852,969.10			672,439.41	2,362,507.70	476,300.53	970,878
1897.....	124,311,914.64	8,638,802.71			536,629.84	2,254,181.40	429,031.14	976,014
1898.....	140,924,848.71	2,737,531.09						982,714
Total.....	2,309,808,611.90	47,687,800.80	14,408,518.90	909,378.11	11,560,682.14	42,290,531.90	7,939,310.04	.....

Not included in Army.

See Appendix.

PENSION APPEALS.

Appeals in pension claims lie from the decisions and rulings of the Commissioner of Pensions to the Secretary of the Interior.

These appeals are considered by the Board of Pension Appeals under the personal supervision of the Assistant Secretary. They relate to the adverse action of the Commissioner of Pensions in claims for pension and bounty land, to questions of attorneyship and fees in pension cases, and to the rules of practice.

Some important changes have been made in the rulings and practice governing the adjudication of pension claims, which are believed to be in accord with the intent and spirit of the pension laws.

There were pending on July 1, 1897, 1,812 appeals and 74 motions for reconsideration. During the year ended June 30, 1898, 12,681 appeals and 626 motions for reconsideration were filed.

There was disposed of 4,860 appeals and 546 motions for reconsideration, leaving pending July 1, 1898, 9,631 appeals and 154 motions for reconsideration. Some of these appeals and motions were dismissed for various causes, and of the number remaining (4,441), in which decisions were rendered during that period, there have been 481 reversals, or 10.83 per cent.

Assistant Secretary Davis invites attention to the fact that the number of appeals and motions for reconsideration filed during the fiscal year ended June 30, 1898, is unprecedented in any one year in the history of the board of pension appeals since its organization, fifteen years ago; and that an examination of the records will show that it is in excess of the number filed in any two years. It is also shown that the proportionate increase has continued since July 1, 1898, and that on October 1, 1898, there were pending 11,820 appeals and motions for reconsideration.

In view of these considerations, I concur in the suggestion of the Assistant Secretary, that Congress be earnestly recommended to provide for three additional members of the Board of Pension Appeals for the balance of the present fiscal year, making a total of twelve members, and that the same be provided for in the annual appropriation for the next fiscal year.

I also concur in his recommendations for additional legislation amending the act of August 7, 1882, relating to marriages; also legislation regulating the payment of pensions to soldiers who deprive their families of the use thereof by reason of immoral habits and incompetency, which renders them unfit to receive or disburse their pension; also an amendment to the third section of the act of June 27, 1890, on behalf of widows whose husbands died while in the service, death not being the result of a violation of any law, rule, or regulation of the military or naval service; in other words, that death under such conditions shall be equivalent to an honorable discharge, as required by existing law.

The soldier's death while in the service is not always a basis for his widow's pensionable status under the general law.

Under a proper construction of the third section of the act of June 27, 1890, the widow and minor children of the deceased soldier are barred from pension under said act for the reason that he was not honorably discharged. Adverse action in such cases seems imperative, by reason of the language of the law, and it is believed that the proposed amendment will authorize a just and equitable adjudication of such claims.

THE PATENT OFFICE.

The Patent Office was created July 4, 1836, and placed under the direction of the Secretary of State, under whom it remained until it was transferred to the Department of the Interior by the act of March 3, 1849.

The report of the Commissioner of Patents upon the business of the Patent Office for the fiscal year ended June 30, 1898, shows that there were received within that year 40,196 applications for patents, 1,831 applications for designs, 93 applications for reissues, 1,928 caveats, 1,891 applications for trade-marks, 205 applications for labels and prints. There were 22,731 letters patent granted, including reissues and designs, 1,455 trade-marks, 71 labels, and 18 prints registered. The number of patents which expired was 14,167. The number of allowed applications which were by operation of law forfeited for nonpayment of final fees was 4,754. The total receipts were \$1,253,948.44; the expenditures were \$1,081,633.79, leaving a surplus of \$172,314.65. The moneys covered into the Treasury of the United States on account of receipts from fees, etc., in patent cases from July 4, 1836, up to and including the 30th day of June, 1898, and in excess of the cost of the management of the Patent Office, amounted to \$5,265,928.88.

Comparative statement.

Fiscal year ended—	Receipts.	Expenditures.
June 30, 1890.....	\$1, 347, 203. 21	\$1, 081, 173. 88
June 30, 1891.....	1, 302, 794. 59	1, 145, 502. 09
June 30, 1892.....	1, 208, 727. 35	1, 114, 124. 23
June 30, 1893.....	1, 288, 809. 07	1, 111, 444. 23
June 30, 1894.....	1, 183, 523. 18	1, 053, 902. 58
June 30, 1895.....	1, 195, 557. 07	1, 033, 103. 08
June 30, 1896.....	1, 307, 090. 30	1, 097, 302. 05
June 30, 1897.....	1, 343, 779. 44	1, 068, 472. 13
June 30, 1898.....	1, 253, 948. 44	1, 061, 032. 79

Applications for patents, including reissues, trade-marks, labels, and prints.

Fiscal year ended June 30—	
1890	43, 819
1891	43, 616
1892	43, 544

Fiscal year ended June 30—Continued.

1893	43, 589
1894	39, 206
1895	41, 014
1896	45, 645
1897	47, 747
1898	44, 116

Applications awaiting action on the part of the office.

Fiscal year ended June 30—

1890	6, 585
1891	8, 911
1892	9, 447
1893	8, 283
1894	7, 076
1895	4, 927
1896	8, 943
1897	12, 241
1898	12, 187

The increase of force authorized by Congress at the last session will enable the office, the Commissioner says, not only to bring up the arrears of work, but also to keep it well in hand, unless there is a heavy increase in the number of applications received. He expects to be able at the end of the present calendar year to report every new case receiving examination within six weeks after its receipt, and every amended case within ten days after its receipt. A practical advance will also be made in the classification of all letters patent and printed publications by the establishment of a classification division, which, in connection with an amplification of the present system of classification, will greatly improve the methods now employed in the examination of applications as to the novelty of invention. This will be extremely beneficial to inventors and those directly interested in the manufacture of patented inventions, as well as to the general public, interested as it is in the early issue of valid patents.

The Commissioner again directs attention to the fact that 76 copyists employed in his office are receiving \$720 per annum, while those employed in other branches of this Department are paid \$900, and he renews his recommendation of last year that the salaries of the former be increased to the latter amount. He states that this is necessary if the office is to retain a permanent force of skilled stenographers and typewriters essential to its needs. The practical effect of the present discrimination is that the best assistants in this line are transferred to other offices, where they get higher salary for the same class of work.

Attention is directed to the frequent resignations of members of the examining corps, which cripples the force and is an evil of no small magnitude, as it is a long time before new and inexperienced men can render equally efficient service. Some who resigned during the present year were actuated by a spirit of patriotism and entered the Army, rendering efficient aid during the Spanish war. These men will be welcomed back to their former places upon returning to civil life.

THE ELEVENTH AND PREVIOUS CENSUSES.

The records of the several censuses from the First to the Tenth, inclusive, are stored in the Patent Office Building; those of the Eleventh Census are in the building known as Marini's Hall, in this city, leased for that purpose.

Such care and attention as has been necessary to the preservation of these records has been given during the year, and much information has been compiled therefrom and furnished to applicants throughout the country.

The records of the Eleventh Census are very voluminous, and in such a condition that they can only be handled with the greatest difficulty. Provision should be made by Congress at an early day for binding the volumes of these returns of the Eleventh Census.

In my last Annual Report I called attention to the necessity for early legislation providing for the taking of the Twelfth Census. Since that time a bill has passed the Senate providing for the Twelfth Census, under the supervision of the director, and is now pending in the House. The early enactment of a law for the taking of this census is highly desirable, in view of the large amount of work which must be dispatched in the preparation of the schedules, etc., preparatory to the enumeration of the population.

GEOLOGICAL SURVEY.

The office of the Geological Survey was first established March 3, 1879, and placed under the supervision of the Secretary of the Interior.

The survey is organized in four branches and fourteen divisions, as follows: Geologic branch, embracing the divisions of geology, paleontology, chemistry, hydrography, and mineral resources; Topographic branch, embracing the divisions of triangulation, topography, and geography, and forestry survey; Publication branch, embracing the divisions of illustrations, editing, and engraving and printing; Administrative branch, embracing the divisions of documents, correspondence, and records, the library, and disbursements and accounts.

The work performed during the year in these branches and divisions consisted largely of a continuation of that outlined in the last annual report, and was actively prosecuted under the general plan of operations approved June 15, 1897.

In the Geologic branch 32 parties carried forward the work, operating in about three-fourths of the States and Territories, including Alaska. Besides the general work in areal or surficial geology, special studies were made of the slate belt of western Vermont and eastern New York, the titaniferous iron ores of the Adirondacks, the zinc district of northern New Jersey, the Virginia coal basin in the vicinity of Richmond, the iron-bearing districts of Lake Superior, the underground waters of Texas, the McAlester coal field in Indian Territory, the Tintic mining district of Utah, the asphaltic minerals in the Uintah and Uncompahgre Indian reservations in Utah, the Coos Bay coal field of

Oregon, and the almost unknown region in Alaska between the coast line on the south and the Yukon River on the north. A combined expedition of geologists and topographers sailed for Alaska in April, with instructions to devote the summer season to surveys and reconnoissances in various portions of the region mentioned.

The paleontologists, in addition to the general work of securing paleontologic evidence to assist the geologists in the determination and correlation of geologic formations, gave attention during the year to a number of special subjects. As in previous years, most of the chemists' energies were necessarily devoted to analyses of rocks and ores for the information of the geologists; time, however, was found for original research in two or three lines of investigation.

In hydrography the measurement of streams continued to receive a large share of the attention of the division, but a considerable portion of the appropriation was devoted to the investigation of underground currents and artesian waters, and to the preparation of reports. The report on the mineral resources was prepared and published in the usual form—in separate brochures by minerals treated—and the whole unified as one of the parts of the annual report of the Survey, and appeared with commendable promptness.

The duties of the Topographic branch, already much enlarged by the Indian Territory surveys, were this year greatly increased by legislation placing the survey of the forest reserves and of the boundary line between Idaho and Montana under the supervision of the Director of the Geological Survey, and by increased appropriations for investigations in Alaska. During the year 30,057 square miles were topographically surveyed, making a total now completed of 784,699 square miles, or approximately one-fourth of the area of the entire country, exclusive of Alaska. In the office the drawings of 64 sheets were finished, ready for engraving.

The field surveys of the Indian Territory were completed the latter part of June. These included the resurvey of the lands of the Chickasaw Nation. During the progress of the work 63,881 miles of lines and 9,303 miles of spirit levels were run, 138 triangulation stations were located, and topographic maps covering 30,885 square miles were made in addition to the subdivisional land maps. The office work is now going forward rapidly in the branch office at Denison, Tex., and it is anticipated that before the close of the calendar year all of that work will have been completed.

This work has demonstrated that it is more economical to survey large areas in this manner than under the contract system heretofore employed by the Government in its land-subdivision surveys. This statement applies to large areas of 1,000 square miles or more. Small areas can be surveyed under the contract system, through the General Land Office or surveyors-general, at less cost than by the Geological Survey, as the contracts are let to local surveyors who do not need to incur traveling expenses.

In the sundry civil act approved June 4, 1897, provision was made for the survey of the forest reserves.

Under the act of March 3, 1891, 17 forest reservations were established by Executive order prior to September 28, 1893, aggregating in area 17,564,800 acres, and on February 22, 1897, 13 additional reserves were established, containing an aggregate area of 21,379,840 acres. On the enactment of the legislation of June 4, 1897, arrangements were at once made for topographic and subdivisional surveys of those portions of the suspended reserves in which there are large interests that may be injuriously affected if the areas are included within the reserves. For instance, the agricultural and mining interests of portions of the Black Hills Reserve of South Dakota, the mining interests of the southwestern portion of the Washington Reserve of Washington, and the timber interests of the eastern portion of the Bitter Root Reserve in Montana. The forestry survey, likewise, was immediately organized.

The purposes of the topographic surveys are (a) the preparation of topographic maps on a scale of 2 miles to the inch, with contour intervals of 100 feet, as base maps for the representation of forestry details, agricultural and mineral lands, and future geologic surveys; (b) the establishment of bench marks indicating elevation above sea level, for vertical control in topographic mapping, and for all mining, engineering, and geologic work; (c) the subdivision of reserves, where necessary, by running township lines for the purpose of designating tracts of land; (d) the demarcation, by means of section lines, of tracts which are more valuable as agricultural and mineral lands than for timber, and (e) the mapping by the topographer in charge of each party of the outlines of all wooded and forest areas.

Early in July the special forest experts began the study of the distribution of the forests and woodlands, the size and density of the timber, the distribution of the leading economic species, the effect of the ravages of forest fires and the amount of damage inflicted by them, the amount of dead timber, the extent to which the forests are pastured, and the extent of the timber already cut and the effects of the deforesting; also the relation of the timber supply to transportation, local demands of miners and settlers, and the supply needed for more distant markets.

The examinations of the surveyors and forestry experts are not limited to the present lines of the forest reserves, but, as provided for in the statute authorizing the survey, they include public lands adjacent to the reserves.

It is anticipated that the 60,000 square miles of forests now included within the reserves can be thoroughly and economically surveyed within five years, provided adequate appropriations are made for the purpose. During the past field season there have been secured nearly, if not quite, enough topographic and forestry data for an intelligent rectification of the boundaries of most of the reserves containing areas

where apparent injury or injustice is being inflicted by the establishment of the reserves.

The forest policy inaugurated by the Department and the operation thereof during the year is more fully discussed under the head of "Forestry" in that portion of this report relating to the General Land Office.

A large number of publications were issued during the year, comprised in six series—annual reports, monographs, bulletins, water-supply papers, geologic folios, and topographic folios and atlas sheets. In addition to these, the Survey published in the spring of 1897, in compliance with a joint resolution of Congress, an edition of 40,000 copies of a map of Alaska, with accompanying text descriptive of routes, geologic formations, and gold deposits.

In August and September the Director of the Survey visited some of the forest reserves in the Northwest, and, under my instructions, made an examination of the Yellowstone and Yosemite National parks, with a view of submitting recommendations concerning roads, surveys, protection, administration.

OFFICE OF EDUCATION.

The act of Congress approved March 2, 1867 (14 Stat. L., 434), established a Department of Education—

For the purpose of collecting such statistics and facts as shall show the condition and progress of education in the several States and Territories and of diffusing such information respecting the organization and management of school systems and methods of teaching as shall aid the people of the United States in the establishment and maintenance of efficient school systems and otherwise promote the cause of education.

By the act of Congress approved July 20, 1868 (15 Stat. L., 106), the Department of Education was abolished, and instead there was "established and attached to the Department of the Interior an office to be denominated the Office of Education, the chief officer of which shall be the Commissioner of Education, * * * who shall, under the direction of the Secretary of the Interior, discharge all such duties and superintend, execute, and perform all such acts and things touching and respecting the said Office of Education as are devolved by law upon said Commissioner of Education." By the act of Congress approved May 17, 1884 (23 Stats., 27), "to provide a civil government for Alaska," the Secretary of the Interior was required to make needful and proper provision for the education of children of school age in the Territory of Alaska, without reference to race, until such time as a permanent provision shall be made for them.

On the 2d of March, 1885, the Secretary of the Interior decided that "the nature of the duties assigned by section 516 of the Revised Statutes of the United States to the Commissioner of Education would seem to point him out as the proper officer through whom the purpose of Congress should be carried into execution," and placed the management of the schools in Alaska under that officer.

The Commissioner of Education reports that during the past year the office has continued the collection of statistics showing the progress of education in the several States and Territories, besides collating the information obtained by special inquiries from some 8,000 institutions of higher and secondary education, as well as from nearly a thousand school superintendents having in their charge city school systems or State school systems. He reports the increase of pupils for 1896-97 over the previous year to be something over a quarter of a million of pupils, and that the total number in the elementary schools, public and private, amounted to 15,452,426; adding to these the number in colleges, universities, high schools, and academies, the total number reached 16,255,093. Although a little more than one-fifth of the entire population attends school for some time during the year, the total average amount of schooling per individual for the whole United States, measured by the present standard, does not quite equal five years of 200 days each for each inhabitant.

He further reports as a matter of congratulation that there has been an increase for twenty-five years of the students in colleges and universities; that in 1872 only 590 persons in the million were enrolled in those institutions, while in 1897 the number had risen to 1,216 in the million, being more than doubled. Considering that the standard of admission to college had been raised during this period, it is safe to say that the number obtaining higher education was three times as large in 1897 as in 1872. The number of students pursuing post-graduate studies and making original investigations in the laboratory or the seminary is twenty-five times as large as it was in 1872.

The following table giving the comparative statistics of the public schools of the United States shows the pupils enrolled, teachers, total expenditure, and the per capita for the past twenty-six years in the elementary schools.

Growth of the common schools.

Year.	Pupils enrolled.	Teachers.		Total expenditure.	Expend- ed per capita of popula- tion.	Expend- ed per pupil.
		Male.	Female.			
1870-71.....	7,561,582	90,293	129,932	\$69,107,612	\$1.75	\$15.20
1874-75.....	8,785,678	108,791	149,074	83,504,007	1.91	15.91
1879-80.....	9,867,505	122,795	163,798	78,094,687	1.56	12.71
1884-85.....	11,398,024	121,762	204,154	110,328,375	1.96	15.12
1889-90.....	12,722,581	125,525	238,397	140,506,715	2.24	17.22
1890-91.....	13,050,132	123,260	245,028	147,494,809	2.31	17.54
1891-92.....	13,255,921	121,573	252,653	155,817,012	2.40	18.20
1892-93.....	13,483,340	122,472	260,278	164,171,057	2.48	18.58
1893-94.....	13,995,357	125,402	263,547	172,502,843	2.53	18.62
1894-95.....	14,243,765	129,706	268,336	175,809,279	2.54	18.61
1895-96 <i>a</i>	14,379,078	130,366	269,959	181,394,428	2.61	18.69
1896-97 <i>a</i>	14,652,492	131,386	271,947	187,320,602	2.62	18.67

a Subject to correction.

The following table, giving the comparative statistics of education in the United States for the past twenty-six years, shows the total enrollment for the years indicated. The enrollment in public and private institutions is given separately under the heads of elementary, secondary, and higher. The public elementary and the public secondary or high schools together constitute the public common schools of the country. Institutions of higher education include universities and colleges, professional schools, and normal schools.

Statistics of enrollment in all schools of the United States.

Years.	Total number receiving instruction.	Elementary (school years 1, 2, 3, 4, 5, 6, 7, and 8).		Secondary (school years 9, 10, 11, and 12).		Higher (school years 13, 14, 15, 16, and over).	
		Public.	Private.	Public.	Private.	Public.	Private.
1870-71.....	8, 633, 924	7, 504, 321	945, 198	57, 261	88, 280	11, 722	77, 142
1874-75.....	9, 799, 373	8, 683, 333	808, 282	102, 345	68, 580	26, 934	109, 899
1879-80.....	11, 002, 808	9, 754, 951	897, 046	112, 554	75, 840	37, 307	125, 110
1884-85.....	12, 951, 748	11, 253, 441	1, 266, 447	145, 583	97, 020	49, 216	140, 041
1888-89.....	13, 726, 574	12, 071, 618	1, 122, 060	219, 641	186, 461	34, 152	92, 702
1889-90.....	14, 212, 778	12, 494, 233	1, 216, 800	221, 522	145, 481	40, 195	95, 047
1890-91.....	14, 669, 069	12, 754, 463	1, 392, 200	222, 868	147, 567	46, 075	105, 896
1891-92.....	14, 714, 933	12, 966, 321	1, 198, 861	247, 660	154, 429	52, 265	95, 397
1892-93.....	15, 087, 230	13, 277, 768	1, 240, 453	256, 628	153, 792	51, 359	107, 230
1893-94.....	15, 530, 268	13, 646, 703	1, 200, 155	302, 006	178, 352	63, 789	139, 263
1894-95.....	15, 688, 622	13, 851, 653	1, 092, 873	361, 370	178, 342	67, 047	137, 337
1895-96.....	15, 997, 197	13, 908, 585	1, 228, 146	392, 729	166, 274	74, 057	137, 406
1896-97.....	16, 255, 093	14, 243, 059	1, 209, 367	420, 459	164, 445	78, 559	139, 204

By an act of Congress approved August 30, 1890 (26 Stats., 417), an annual appropriation of \$15,000 for the year ending June 30, 1890, and of \$1,000 additional for each subsequent year until said annual appropriation amounts to \$25,000, was made out of money arising from the sales of public lands, "for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts" in each State and Territory.

During the year the returns from the colleges giving instruction in agriculture and the mechanic arts were carefully examined, and on the results of such examination the Secretary of the Interior certified to the Secretary of the Treasury, in accordance with the requirements of section 4 of said act, the several States and Territories (forty-eight in number), as entitled to the sum of \$24,000 each, the same being the installment for the year ending June 30, 1899.

During the year there have been maintained in Alaska 18 day schools, with 20 teachers and an enrollment of 1,216 pupils. According to the census of 1890 the population of Alaska was 32,052 in the aggregate, but of these only 4,298 were white persons. Since that census was taken extensive gold discoveries have been made, and the consequence has been a large influx of immigrants from the States and Territories. The number of white persons has, according to all accounts, tripled or

even quadrupled in the Territory, and there are reported to be more of them now on the middle Yukon than in the whole Territory in 1890. Under these changed conditions it will be necessary to increase the number of schools as soon as the centers of population have become fixed. Hitherto the mining population has been of such a fluctuating character that it has not seemed advisable to make permanent investments in school buildings at any of these centers.

For the past seven years efforts have been made to introduce reindeer from Siberia into Alaska, with a view to train the natives as herdsmen and teamsters. During the four years, 1892 to 1895, inclusive, 538 reindeer purchased in Siberia and safely landed in Alaska had increased by June of 1897, to the number of 1,466; of these 469 were in the Government herd at Teller Station, Port Clarence, near Bering Strait. They were removed during the summer to the new station at Unalaklik, selected on account of its more healthful situation and for its nearness to St. Michael and the settlements on the Yukon River. This herd is reported to have increased by the birth of fawns to something over 700 deer all told. In August, 1894, a herd of 113 deer was loaned to the Congregational Mission, at Cape Prince of Wales, on agreement that a number of deer equivalent to the original number furnished should be returned to the Government after three years, and on condition that the stock of deer be used for the instruction of natives in the art of herding the reindeer and training them to harness. Of the young men trained as apprentices in the management of the deer, nine have proved industrious and skillful, and in accordance with the stipulations have been allowed 2 deer for the first year and 5 more at the end of the second year. These nine apprentices have received from 2 to 7 apiece, the original assignment being 52, which has increased by the birth of fawns to 133 in 1897. In 1895, 112 deer were loaned to the most promising apprentice, Anti-Sarlook, and stationed at Cape Nome as a separate herd. In 1896 two other herds of 50 each were loaned respectively to the Swedish Evangelical Mission, on Golovin Bay, and the Episcopal Mission at Fort Adams, on the Middle Yukon.

Out of the 1,466 deer reported as the total of all the herds in June, 1897, 799 were the property of the Government and 667 belonged to the three missionary stations mentioned and to the native apprentices. The object aimed at has been to get the reindeer as fast as possible into the hands of thrifty natives well trained in the art of herding and using the deer in harness.

In November, 1897, information was received that eight whaling vessels, with crews aggregating about 400, had been caught in the ice in the vicinity of Point Barrow, and that the men were in danger of starvation. A relief expedition was dispatched by the United States Revenue-Cutter Service. Instructions were issued to the relief party to effect a landing and to proceed to Cape Prince of Wales, secure the services of Mr. W. T. Lopp, a Congregational missionary, borrow the

herd at that station, also the herd in charge of the Eskimo, Anto-Sarlook, at Cape Nome, and with these proceed to Point Barrow to the relief of the imprisoned whalers.

The expedition under Lieutenant Jarvis, Lieutenant Bertholf, and Surgeon Call made a safe landing near Vancouver December 17, and, gathering the herds at Cape Prince of Wales and Cape Nome, reached Point Hope on March 5 and Point Barrow on March 29, completing an arduous overland journey of about 1,500 miles. Information from Point Barrow shows that an unusual number of wild reindeer (caribou) moved to the north during the past winter, and that hunting parties from that station succeeded in largely increasing the supply of food from this source. There remained in August of the herd driven north 391, which were left in charge of competent apprentices at the Presbyterian mission at Point Barrow, thus forming the nucleus of a herd at a very important center.

For the past two years, on account of ice in the bays in Siberia, it has been impossible to purchase any new herds of deer. The average annual number for the four years preceding had been 134. The present summer Dr. Sheldon Jackson succeeded in obtaining a herd of 161, which have been left at Cape Prince of Wales, partly replacing the herd removed for the relief of the whalers.

Dr. Sheldon Jackson was, in December of 1897, directed to report to the honorable the Secretary of War for the purpose of proceeding to Lapland and procuring a herd of reindeer to be used in the transportation of supplies for the relief of the miners in the Yukon Valley.

Pursuant to such instruction, he, in connection with Lieut. D. B. Devore, proceeded to Lapland and purchased 539 trained reindeer, with necessary sleds and harness, and shipped the same, together with 68 trained Lap reindeer drivers and their families, to New York. From that point they were transshipped to Seattle, Wash., and thence to Haines Mission, Alaska, arriving there with 526 deer.

While at Haines, circumstances prevented the driving of the deer to the moss pasture, 50 miles inland. As a consequence, the animals were detained on the beach for three weeks, and 300 deer died from lack of proper food. The remainder of the herd, 226 in number, were finally driven to the moss pasture, and thereafter by slow stages started across the country to Circle City, Alaska, and were turned over by the War Department to the Interior Department, this latter action having been taken for the reason that upon the arrival of the expedition in Alaska it was found that they would not be needed for the relief of the miners in the Yukon Valley.

The reindeer and their Lap drivers have largely passed into the service of the Post-Office Department, and are now being distributed for the carrying of the Yukon mail up and down the valley of the Yukon through a thousand miles of scattered mining settlements in the wilderness.

PUBLIC DOCUMENTS.

Section 92 of the act of January 12, 1895, regulating the printing and distribution of public documents, provides that "public documents received by the several Executive Departments shall be distributed by a competent person," who "shall keep an account in detail of all publications received and distributed by him. He shall prevent duplication, and make detailed report to the head of the Department, who shall transmit the same annually to Congress."

The report of the chief of the document division shows that publications of the Government were received during the year by the several offices and bureaus of the Department as follows:

Office of the Secretary	180,306
Patent Office	435,520
General Land Office.....	93,000
Pension Office	22,218
Office of Indian Affairs.....	3,250
Office of Commissioner of Railroads	2,000
Office of Education.....	145,670
Geological Survey	538,095
Total.....	1,420,059

Of those received by the office of the Secretary, 89,558 were reports of the Eleventh Census, comprising Final Reports on Vital Statistics, part 1, and Population, part 2, and the Compendium, part 3.

The whole number of reports of the census received to the close of the fiscal year is 644,254. Since that date a portion of the edition of the Statistical Atlas of the United States, ordered by Congress, has been delivered by the Government Printing Office. This is the last of the publications of the Eleventh Census, the entire edition of which it is hoped will be received by the close of the present calendar year. It therefore appears that the complete statistics of the census of 1890 were not published until nearly eight years subsequent to the census year. The first volume published, viz, the Report on Mineral Industries, was received from the Printing Office October, 1892. It is hoped that some means may be devised by which the full results of the census of 1900 can be placed before the public not later than five years after the taking of said census.

Included among the documents received by the Secretary's office were also 36,452 of the publications of the United States Geological Survey, which were in the main distributed to libraries designated by Senators and Representatives to receive them.

Three hundred and seventy-six copies each of volumes 167 to 169 of United States Reports were delivered to the Department by the reporter of the Supreme Court, in compliance with the provisions of section 681 of the Revised Statutes and of act of February 12, 1897, which have been distributed to judicial and other officers of the Government entitled

to receive them. Attention is once more called to the importance of additional provision for the purchase and distribution of these volumes. Since the passage of the act above referred to, which is supposed to embody the policy of the Government in regard to this matter, the number of United States judges has been increased, as has been also the number of places in the several States and Territories at which United States courts are holden, so that the number of copies of reports now provided is not adequate to meet the requirements of the executive and judicial officers of the Government to whom these volumes are necessary in the discharge of their official duties.

During the last session of Congress a bill satisfactorily covering this matter was reported by the Committee on the Judiciary in the Senate and now awaits final action by that body. It is understood also that a similar bill was reported by a subcommittee of the Committee on the Judiciary in the House, but at too late a date to receive consideration by the whole committee. This bill should, in my judgment, receive favorable action on the part of both Houses of Congress at the earliest practicable moment after its convening in December.

The sum of \$2,595.19 was received from the sale of documents during the year by the office of the Secretary, and \$4,196.84 by the Geological Survey. A large sum was also received by the Patent Office from the sale of its own publications, but this is not separately shown in the report of the Commissioner of Patents giving the receipts of that office.

OFFICE OF RAILROAD AFFAIRS.

The office of Auditor of Railroad Accounts, established by the act of June 19, 1878, as a bureau of the Interior Department, and the duties of the Auditor, under and subject to the direction of the Secretary of the Interior, are defined to be "to prescribe a system of reports to be rendered to him by the railroad companies whose roads are in whole or in part west, north, or south of the Missouri River and to which the United States have granted any loan of credit or subsidy in bonds or lands; to examine the books and accounts of each of said railroad companies once in each fiscal year and at such other times as may be deemed by him necessary to determine the correctness of any report received from them; to assist the Government directors of any of said railroad companies in all matters which come under their cognizance whenever they may officially request such assistance; to see that the laws relating to said companies are enforced; to furnish such information to the several Departments of the Government in regard to tariffs for freight and passengers and in regard to the accounts of said railroad companies as may be by them required, or, in the absence of any request therefor, as he may deem expedient for the interest of the Government; and to make an annual report to the Secretary of the Interior, on the 1st day of November, on the condition of each of said

railroad companies, their roads, accounts, and affairs, for the fiscal year ending June 30, immediately preceding." The title of Auditor of Railroad Accounts was changed by the act of March 3, 1881, to that of Commissioner of Railroads.

The report of the Commissioner shows the operations of the last fiscal year, and the present condition of the several railroads which have received subsidies in bonds and in grants of land from the United States.

The Commissioner remarks that the long period of financial depression which commenced in 1893 and culminated in 1896 has come to an end. The business of the country has been steadily expanding for the past fifteen months, and this is particularly noticeable in railroad affairs. He notes that in April, 1894, receivers controlled 210 roads in this country; that is, about 20 per cent of the total mileage. On June 30 of this year this number was reduced to 119.

He reports that a careful inspection was made of the bond-aided Central Pacific and of many land-grant roads. Substantial improvements were noted in the maintenance of these properties. Particular attention was given to the Central Pacific. This road has been maintained up to its usual high standard. The track was found in very good condition as regards both surface and line. The roadbed is in good shape, an absence of low or narrow banks being noticeable. The company continues the policy of substituting steel bridges for wood structures, three steel bridges having been erected during the past year. The offices of the bond-aided roads were visited and the books examined with a view to ascertaining the amounts due the United States from these companies. In the report of the Commissioner will be found full statements of the indebtedness of each company under existing laws.

THE GOVERNMENT DIRECTORS OF THE UNION PACIFIC RAILWAY COMPANY.

The act of July 1, 1862, provides for the appointment by the President of two directors of the Union Pacific Railway Company, to represent the Government and act with the regular board of directors of the company. By the act of July 2, 1864, the number of Government directors was increased to five. They are required to attend the meetings of the board, to visit all portions of the road as often as necessary, and to report to the Secretary of the Interior from time to time touching the condition and management of the company.

The compensation of a director is \$10 per day for each day actually employed, and mileage from residence to place of meeting and return at the rate of 10 cents per mile each way. This compensation is paid by the railway company.

The Government directors present a detailed report of the proceedings in the matter of the foreclosure of the Union Pacific Railway

Company and the sale of the properties. In pursuance of the decree the special master, on November 1, 1897, sold the (Union Pacific) Railroad, franchises, and property, and the bonds in the sinking fund, at public auction. The total amount realized at this sale was \$58,448,223.75, which covered the entire indebtedness of the Union Pacific, principal and interest.

This report then shows that a second foreclosure suit, instituted by the United States and others for the foreclosure of that portion of the Kansas Pacific Railroad which was subject to the lien of the United States, was prosecuted to a final decree on July 30, 1897. In pursuance of this decree the special master, on February 16, 1898, sold the railroad, franchises, and property at public auction. The said properties were sold for \$6,303,000, the amount of the principal of the subsidy bonds issued by the United States to this company. This amount has been paid to the United States.

It is further shown in this report that the purchasing trustees duly transferred and assigned their said bid, etc., to the Union Pacific Railroad Company, a corporation organized under the laws of the State of Utah. In both of the foregoing sales the right of the Government to preference at all times for the use of the railroad, telegraph, etc., at fair and reasonable rates is expressly reserved.

The Government directors note that the entire indebtedness of the Kansas Pacific was \$12,891,900.19, and that after deducting therefrom \$6,303,000, the amount realized from the sale of the road, there still remains due the United States the sum of \$6,588,900.19. Proceedings have been instituted by the Department of Justice against the receivers of the Union Pacific Railway Company for this sum.

The directors recite the changes which have taken place in the organization of the original Union Pacific Railroad Company and ask to have their status defined.

THE TERRITORIES.

ALASKA.

The governor of Alaska, John G. Brady, in his report on the condition of affairs in the district, calls attention to the difficulty of preventing the smuggling of liquor into Alaska. According to the present regulations, intoxicating liquors may be lawfully imported for medicinal, mechanical, and scientific purposes only, under permits issued by the collector of customs at Sitka. Special permits to sell must be obtained from the governor. However, without a fleet of revenue cutters and steam launches to patrol the tortuous channels of Southeast Alaskan waters it has been impossible to enforce these regulations. Smuggling prevails, and saloons are open in all of the towns and mining camps. The governor states that the report of the Commissioner of Internal Revenue for 1897 shows that the deputy

collector in Alaska received a special tax from 147 retail liquor dealers, 6 breweries, 8 retail and 1 wholesale dealers in malt liquors. The court has endeavored to deal with those who engage in this traffic, but without satisfactory results.

In order to obtain the opinions and advice of the leading citizens of Alaska, the governor addressed a circular letter to many of them upon the subject. Their replies show a consensus of opinion in favor of a stringent high-license law which would tend to stamp out smuggling and the selling of liquor to the natives. The governor strongly recommends that the laws with regard to the sale of liquor in the District of Columbia, enacted in 1893 and 1894, be made applicable to Alaska, provided, however, that no license shall be less than \$1,000 nor more than \$2,000, and that the governor, United States marshal, and district attorney be constituted an excise board to enforce the provisions of said laws. This course, the governor states, would have the approval of a majority of the citizens and would provide revenue ample enough to pay nearly all of the expenses of governing Alaska.

Early action by Congress upon the report of the commission to revise and codify the criminal and penal laws of the United States with regard to Alaska is urged.

For the reason that the laws of the United States relating to mining claims were by the organic act of 1884 declared to be in force in the district of Alaska, there has never been any difficulty with regard to the locating of mineral lands in the Territory. The general land laws, however, are not in force in Alaska. The governor states: "There are no surveyed lands in Alaska, nor has any system of survey been provided. It is impossible, therefore, for a poor settler to acquire a homestead. If he were able and willing to stand the expense of a survey, he has no assurance that it will be accepted by the Government. If he settles as a squatter and makes improvements he can not tell how future surveys may affect him."

The governor believes that Alaska should and can pay revenue into the United States Treasury. Under a high-license law he estimates that the liquor traffic would yield an annual revenue of not less than \$200,000; a tax of a few cents per case of salmon would produce from \$35,000 to \$50,000; 10 cents per ton on wharfage collected during the past year would have yielded \$100,000. He recommends, however, that any system of taxation for the Territory be deferred until land laws shall have been provided.

Attention is called to the fact that many sections of Alaska are suitable for agricultural purposes. With proper care, cattle can be raised in the milder districts. It can not be doubted that in the course of time vast herds of reindeer will cover the plains of northern Alaska, and a few thousands of dollars spent now in helping the Eskimo to obtain herds will save the expenditure of many thousands in the future.

The fur seal are doomed to extinction unless all pelagic sealing can be stopped. The branding of female seals has proved a success. The

brands render the pelts valueless and show that the United States has a property right to the animal. The raising of blue foxes is becoming an important industry. The hunting of the sea otter has been so unremitting that very few are now left. The governor recommends that the killing of them be prohibited for a long time.

Representation in Congress for the citizens of Alaska is strongly urged. The salmon-canning industry in Alaska is of immense value, but the laws which should regulate it are variously interpreted and are not enforced. The inspectors can visit only the few canneries located at the regular stopping places of the mail steamers, and while there, owing to the lack of other accommodations, must be the guests of the superintendents of the canneries.

The past year has been one of great progress in mining operations. Many of the Americans who located claims in the Northwest Territory have abandoned them and have settled on the Alaskan side of the international boundary line, where a new town, Eagle City, has sprung up. There has been great development in quartz mining in southeast Alaska and along the coast as far as Unalaska. Coal has been discovered near the Upper Yukon, the Tanana, and on Prince William Sound.

Public buildings at Sitka are urgently needed for the accommodation of the officials. The Russian log houses which came into the possession of the United States at the time of the transfer have been used for this purpose for thirty-one years. They have been repaired year after year, but the governor states that it is a waste of material to continue this course any longer. It is urgently recommended that Congress appropriate \$110,000 for the erection of a penitentiary and buildings for the accommodation of the officials.

An appropriation of \$60,000 for the education of children in Alaska is earnestly recommended. Thirty thousand dollars has hitherto been appropriated annually and has been expended by the Bureau of Education in maintaining the schools already in existence, but many new towns have sprung up, where educational facilities are urgently needed.

The native people of Alaska are now in a transition state, ready to abandon old customs and ideas and adopt American ways of living. They are self-supporting; the young men are asking to be licensed as engineers and pilots, to be allowed to locate land and mining claims. The governor recommends that the rights and privileges of American citizenship be conferred upon them. He suggests that the leading men of the tribes in southeast Alaska be invited to a convention at Sitka, where they could be addressed by the governor and other officials, and that \$1,500 be appropriated to defray the expenses of such a convention.

Attention is called to the fact that the rapid increase of the number of vessels plying Alaskan waters necessitates the erection of many light-houses.

Independent means of transportation in discharging their duties should be provided for the governor, United States marshal and his deputies, inspectors of fisheries, and other officials.

An emergency fund, to be disbursed by the governor, should be provided. In case of disaster by fire or shipwreck, there is now no fund from which immediate relief can be furnished.

A monthly mail service throughout the year between Sitka and Unalaska should be established. Cable connection between Alaska and the States, encouraged by Congressional action, is urged. The first railway in Alaska, between tidewater and the lakes at the headwaters of the Yukon River, is being constructed by the Pacific and Arctic Railway and Navigation Company.

There is under the present form of government a lack of executive responsibility. I respectfully urge that Congress provide for such increase of the power of the governor as will enable him, with the advice of a council, to administer the laws of the Territory more effectively than can be done under the present system.

The policy of extending the land laws of the United States to Alaska, or at least to the settled portions of the Territory, should have careful consideration.

I respectfully call attention to the various recommendations of the governor, many of which should receive serious consideration.

ARIZONA.

The governor, N. O. Murphy, reports that no complete census has been taken since 1890. The population has increased very rapidly, however, within the last eight years, and it is believed that the Territory has now nearly 100,000 people. The class of immigration to the Territory insures a high grade of citizenship. The great and varied resources of Arizona invite strong, courageous characters, who come seeking investments and permanent homes. Social and moral conditions here compare favorably with any portion of the Union. The bonded and floating debt of the Territory on July 1, 1898, aggregated \$997,260.87, the cash on hand \$123,861.24, leaving the net debt \$873,399.63. The aggregate value of the assessed lands in the Territory is \$9,701,481.91, and the value of improvements thereon is \$5,425,503.16. There are 1,366 miles of railroad in the Territory, of which 989.568 miles, valued at \$5,014,680.77, are assessed as taxable property. The assessed valuation of all taxable property is \$31,473,359.96, an increase of \$859,647.15 over the preceding year.

During the year goods were imported valued at \$3,714,964.35, upon which duties aggregating \$137,655.46 were collected, an increase of \$12,322.84 over the previous year. Seven and two-thirds per cent of all goods imported were dutiable. Thirty-eight thousand six hundred and fifty-nine head of cattle were imported, of which 6,428 were admitted free of duty. Goods were exported during the year aggregating in value \$1,188,381, an increase of \$155,967 over the previous year.

The total number of entries of land of all classes in the Territory was 577, embracing an acreage of 76,182.93.

Of the total area of the Territory, embracing some 22,500,000 acres, considerably less than one-half per cent is arable land. Of the arable lands more than one-fourth of a million acres are under canal irrigation at the present time, and with the canals in process of construction this area will soon be greatly augmented. The arable lands of the Territory are in the aggregate greater than the total area of the smaller of the New England States, and a large portion of these lands will at no distant date come under cultivation.

Of the arable lands now under cultivation, approximately 280,000 acres are in Salt River Valley. This valley is of wide extent, practically level and perfectly situated for irrigating on a large scale from canals. Canals at Yuma and elsewhere are now in process of construction, which, when complete, will add materially to the agricultural interests of the Territory.

The governor earnestly recommends that the arid lands of Arizona be ceded to the Territory, and the necessity of further legislation by Congress on the subject thereby relieved. He is of the opinion that this would be the quickest, best, and most satisfactory way to secure the reclamation and occupancy of the arid portions of the country.

Among the many agricultural and horticultural products much attention has been given to the cultivation of sugar beets, canaigre, date palms, melons, cotton, tobacco, sugar cane, etc. Almonds and peanuts are profitable products. Among the staple crops are alfalfa, wheat, corn, barley, and oats. Nearly all varieties of root crops are grown in the Territory, and in many of the valleys throughout the mountains enormous crops of potatoes are raised. Market gardeners in the vicinity of the larger towns and villages grow vegetables every month of the year.

The pine timber resources of the Territory it is believed will be sufficient for any population for at least one hundred and fifty years. The pine forests of Northern and Central Arizona cover an area of about 2,700 miles, or approximately 1,750,000 acres.

During the past year the live stock interests of Arizona have grown and flourished, and in spite of the heavy shipments made from every railroad station there are as many cattle as last year. Statistics show that there are 806,205 cattle, sheep, and swine in the Territory, valued at nearly \$5,000,000. Grazing has been especially profitable during the year because of rain upon the upland mesas and ranges, producing bountiful grasses.

The shipments from July 1, 1897, to June 30, 1898, have been 253,318 head and the prices realized about \$5,000,000; number of head of cattle slaughtered by licensed butchers of Arizona, 30,726. It is estimated that 50,000 head of sheep have been shipped, and between 3,000,000 and 4,000,000 pounds of wool, for which there was received an estimated total of about \$615,000. There was also shipped 17,193 hogs.

The mining industries receive much attention. Prof. W. P. Blake,

Territorial geologist, reports that of all the metals gold is the most widely and generally distributed in all parts of Arizona, and that there is no other part of North America where probably such a variety of minerals can be found. The gold, silver, and lead mines have been worked with gratifying results. The production of copper has exceeded the records of former years and has been a profitable one for the copper producers. The production in 1897 was 81,019,922 pounds and for the six months ending June 30, 1898, 49,503,294 pounds.

The past year has been one of steady progress in the schools of the Territory and reports show that the schools are in better condition than ever before in their history. The following statement shows the status of the schools for 1898: Teachers, 365; school districts, 244; enrollment, 14,613; children of school age at last census, 18,802; average length of school term, 6.50 months; average salary paid teachers, monthly, \$66.67; amount paid in salaries of teachers, \$169,894.39; total expenditures, \$221,389.75; valuation of school property, \$472,107.64.

The number of Indians in the Territory can not be given exactly as no complete census has been taken during the year, but a very close approximation fixes the number at 40,569. There have been no outbreaks nor depredations by Indians within the year. The Indian schools throughout the Territory are very prosperous. The Indian Industrial Training School at Phoenix has grown during the year from 250 to 450, the average being 418. The school is composed of children from all the Indian tribes in the Territory and those residing in New Mexico, Oregon, and California.

The governor recommends that an ethnological commission be appointed, to consist of the ablest scientists who can be obtained by the Government, for the purpose of thorough, careful, and extended ethnological and archæological research in the Territory. He also recommends that Whipple military post be reestablished and improved; that a reasonable sum be appropriated for artesian-well boring in the Territory; that the salaries of the Federal judges within the Territory be increased; that Congress appropriate money to pay the governor and secretaries of Territories the salaries allowed them by law, and that the pay of members of the Territorial legislature be increased.

He adds that Arizona's people, by their patriotism and valor, by their thrift and ability, by their loyalty to the Republic, fealty to national principles, and every consideration of true Americanism, have earned and won the inestimable privilege of self-government. They all ask that which of right should be granted—the admission of the Territory into the Union as a State, without longer delay.

OKLAHOMA.

The governor, Cassius M. Barnes, reports that Oklahoma's growth of population has been as remarkable as her development along other lines. From an unbroken, uninhabited prairie, in a single day it sprang into existence as a community of three-score thousand souls.

The census of 1890 gave the Territory, then barely organized, a population of 61,834, but on several occasions since the Territory has increased its population 50 per cent or more in a single day by the settlement of Indian lands thrown open to homestead entry. For several years there have been no openings of reservations, and hence no such sudden increase in population; but the tide of immigration from all parts of the United States has been an unceasing one, and the peopling of some of the counties has been unprecedented for a steady growth without the attendant elements of boom or rush.

The population was reported in 1896 to be 275,587; the assessors' returns for 1898 show a population of 311,400, a gain of 13 per cent in two years. This enumeration, however, does not include the transient population of the towns and cities, who do not list property for taxation, and it is therefore estimated that the actual population at this time is fully a third of a million.

The people come from every State in the Union and are truly cosmopolitan. The percentage of foreign-born population is very small, but those in the Territory are naturalized and thoroughly identified with American ways and institutions.

The taxable property of the Territory is \$40,623,816, an increase of \$8,589,064 over last year; the total bonded debt is but \$48,000, which was incurred in the first year of the Territory's history to erect college buildings. Added to this, the Territory has a warrant indebtedness of a little over \$251,530.51. The Territorial tax rate is but 4.3 mills for all purposes.

The public school system is excellent; the general scheme of education embraces a continuous course from the district school to and through the university. There are 90,585 school children and 1,879 school districts, having school houses valued at \$454,574.68. These schools were maintained during the year at a cost of over \$250,000.

The higher institutions of learning of the Territory—the University, the Agricultural and Mechanical College, the Normal, at Edmond, the Northwestern Normal, at Alva, and the Colored Agricultural and Normal University, at Langston—are all doing good work, have excellent faculties, their attendance aggregating 1,000 the past year with every prospect of its being doubled the coming year. There are also a number of good sectarian schools and colleges and a score of excellent Indian schools, notably that known as "Chilocco," at which there was an attendance of over 500 during the past year.

In a social and religious way the people of Oklahoma compare favorably with those of any other State, all of the leading religious denominations and fraternal organizations being well represented.

There are 661 churches, with property valued at \$368,000, and over 1,000 Sunday schools, with 34 Masonic, 64 Oddfellow, 23 Knights of Pythias, and many more kindred organizations.

During the past year incoming settlers filed upon 1,127,426 acres of Government land. There are still several million acres of vacant land

in the Territory subject to homestead entry and some of it the best of farming land.

The demand for labor is always equal to or in excess of the supply, and no man or woman need long be idle in the Territory.

There are 49 Territorial and 6 national banks, with an aggregate paid-up capital of \$789,786.69, the former having deposits amounting to \$2,560,485.18, the latter with \$1,071,490.36. During the year 6 new banks were started, 2 were consolidated, and 1 failed. The Territorial banks made a gain in reserve of 60 per cent, in deposits of 75 per cent during the year. The average reserve of these banks is four times as great as required by law. The national banks gained for the year 50 per cent in deposits, 125 per cent in loans, and 80 per cent in cash on hand. During the year \$5,567,271 of fire insurance, \$906,132 of life insurance, and \$449,121 of casualty and indemnity insurance was written.

The railway facilities are excellent. The Territory can be reached by direct trunk lines from any portion of the nation, and there is no portion of it but is reasonably accessible to railways and their attendant comforts and advantages. Seven railways are in operation, several more are building, and half a dozen projected.

The home and foreign trade of the Territory has more than doubled during the past year.

The school land office is the largest department of the Territorial government. There are under control of this department 10,800 quarter sections of land, about 8,500 of which are leased, and the cash receipts for the year were \$186,789.49, a large portion of which (\$121,383.90) was divided per capita among the school districts. Over \$23,000 was divided among the Territorial colleges, and an equal amount put into the permanent public building fund.

The Territory has no public buildings, except five college buildings, but there is a public building fund of over \$53,000 for their erection when they are decided on. The cities and counties are all well governed and managed, and their bonds and warrants are the best of securities. The cities have waterworks, electric lights, good streets and sidewalks, the best of graded schools, fire protection, and good police regulations.

The newspapers number 14 dailies, 108 weeklies, 1 semimonthly, and 10 monthlies, a total of 133—a greater number in proportion to the population than any State in the Union.

Few portions of the continent have a more attractive climate the year round than this Territory. The winters are mild and pleasant, the spring and fall delightful, and while the summers are hot, there is almost a continual breeze and, with but few exceptions, the nights are cool and pleasant.

As an agricultural country, Oklahoma is without a superior. The crops of last year were such as to astonish the world, and the season so far has been such as to insure even greater crops for 1898. The

wheat crop of 1897 was 20,000,000 bushels, bringing to the farmers \$13,000,000 to \$15,000,000. This year the acreage was greater, but the yield not quite as good, so the aggregate crop will be about the same. The cotton crop last year was 140,000 bales, requiring 5,000 cars to ship, and bringing to the farmers \$5,000,000 in cash. The Territory raises large quantities of corn, hay, castor beans, oats, kaffir corn, millet, alfalfa, potatoes, peanuts, melons, etc. Fully 40,000 bushels of kaffir corn were exported from Oklahoma to European markets the past year, and there is a rapidly increasing foreign demand for this new product. A large portion of the Territory is especially adapted to stock raising, and live-stock men are prospering. There are in the Territory 203,974 horses, 38,837 mules, 775,851 cattle, 257,740 hogs, and 52,868 sheep and goats. The Oklahoma Live Stock Association, with headquarters at Woodward, is one of the largest associations of the kind in the nation, its membership representing the ownership of over \$4,000,000 worth of cattle.

All kinds of fruit do well, and some of the finest peaches, grapes, and apples at the Omaha Exposition were from Oklahoma. Peaches bear the third year from the seed, produce enormously, and their size and flavor are not excelled by California fruits. Several hundred cars of peaches were shipped out last year. Grapes of all kinds do well, and the best of wines are made from them.

Some coal is being mined in the Territory, and salt taken from the immense beds in the western part, while several large cement beds are now being worked. There are many good veins of coal at various points, indications of zinc, lead, copper, gold, and silver, while there are immense deposits of iron in the Wichita Mountains. There are also in these mountains great deposits of asphaltum, fine oil springs, and many kinds of fine clay deposits. Among the most remarkable resources of the Territory are the great salt deposits.

In the salt reserves in the northern part of the Territory are thousands of acres covered with a dazzling white deposit of pure salt, and great salt springs gushing out strong brine. In the northern part of Blaine County are great beds of rock salt, and the brine seeping up from them forms Salt Creek, one of the most remarkable streams in existence, its waters when evaporated yielding over 50 per cent of pure commercial salt. There are in the Territory strong indications of both oil and gas, and land is now being leased preparatory to the development of the field.

There are 22 flouring mills, with an aggregate daily output of over 3,000 barrels; numerous ice and cold-storage plants, three cotton compresses, three cotton-seed oil mills, a railroad shop, 100 cotton gins, 3 canning factories, 3 creameries, salt works, planing mills, harness factories, cement works, and scores of other small industries; and the Territory offers special inducements to small manufacturing establishments of every kind.

There are 196 insane, an increase of 53 during the past year. Their care costs the Territory \$61,320.50.

The governor recommends the passage of an act correcting the ambiguity and uncertainty of the act reserving school lands in the Cherokee Strip, the language of the act as it now stands giving rise to a contention as to the disposition of the funds arising from the lease of said lands; he urges that the saline reserves in the Cherokee Strip be given to the Territory for the benefit of the higher institutions of learning; that Fort Supply Reservation, on which there are buildings going to decay, be transferred to the Territory for such use as is deemed best by the people, and suggests the advisability of granting to the settlers of Beaver County preemption and tree-claim rights, or the right to purchase a limited area of Government land at a nominal price.

The governor also states that there is a stronger sentiment in the Territory for immediate Statehood than existed at the time of the rendition of his last annual report.

NEW MEXICO.

The report of the governor, Miguel A. Otero, estimates the total population of the Territory at 282,900. There has been quite an influx of new residents to the principal cities and mining districts. The subject of irrigation is treated at length. The report says:

The improved systems of irrigation upon which New Mexico has to depend for the multiplication of its land area are developing rapidly, but there are still many opportunities for the investment of capital in irrigation projects, which can not fail, under good management, to produce good results. There is in operation the Springer system of irrigation, with 50 miles of ditches and 5 reservoirs, covering 22,000 acres. The Vermejo system, which controls 57 miles of ditches and 10 reservoirs, supplies 30,000 acres. In the northwestern portion of the Territory there are 200 miles of ditches, watering 24,000 acres. There are several tracts of fertile soil accessible to streams, which will afford an ample supply, awaiting the attention of moneyed men. Also extensive ditch systems are in operation in the Mimbres region of Grant County. The irrigation projects noted above are in the four corners of the Territory. In the meantime the great central portions are receiving attention, more than fifty companies having been organized for irrigation projects, and several having plants in operation, affording to the homeseeker at the present time ample opportunity for settlement and reclamation.

The mining industries of New Mexico are reported as encouraging. The Territory is destined to become one of the richest mineral producing regions of the Rocky Mountain range. All that it needs is the influx of more capital to thoroughly develop the various mines. The gold output is heavy from many districts.

The production of coal for the fiscal year 1897 and 1898 was 858,583 tons, being an increase of 125,044 tons.

New Mexico's natural adaptability to sheep raising and wool growing is well known. It has been for many years past the most important and profitable industry in the Territory. At this time there are owned over 4,000,000 head of sheep. The wool clip will amount to fully

15,000,000 pounds for this year. The sheep business of New Mexico has resulted in the establishment of another home enterprise, viz. that of wool pulling and tanning. There are located at Las Vegas two wool-pulling plants, one of which is also engaged in the tanning of leather.

The governor reports that the outlook for the stock-growing interests of New Mexico was never so encouraging as at present. Agriculture is prospering under the systems of irrigation in vogue. The fruit industry is destined to become of great importance. The beet-sugar industry in the Pecos Valley has occasioned widespread popular interest in the cultivation of sugar beets throughout New Mexico.

The educational institutions of the Territory are reported to be in flourishing condition. The enrollment in public schools is given as 150,327; average daily attendance, 105,819; number of schools, 3,355; receipts, \$1,359,613.88; expenditures, \$1,360,376.16. Value of sectarian school property, \$313,600; enrollment, 3,600.

The report states that 79 per cent of the present population are able to read and write, leaving only 21 per cent of illiteracy. There has been a marked change since 1890, when the percentage was 44.49, and was, in a large degree, attributable to the fact that there were still living many of the inhabitants who were in the Territory before it became a part of the United States. It is estimated that the percentage of the inhabitants unable to speak English will not, at the utmost, exceed 15 per cent, as against 61.11 percentage as shown by the census of 1890.

The receipts by the Territorial treasurer from November 30, 1896, to May 28, 1898, were \$540,488.57, and the expenditures \$462,876.60, showing a net gain during that period of \$77,611.97.

The Indian industrial schools at Santa Fe and Albuquerque, supplemented by the several governmental schools at the various pueblos, are all doing fine work for the education of the Indian children. Nearly every Indian child in New Mexico is provided with the means of education, and the schools are very largely attended.

New Mexico enthusiastically responded to the call for troops for the Spanish-American war, furnishing in a short time her quota of soldiers. Says the Governor:

More men responded under each call than were required to fill our quota, and in their eagerness to serve their country it is estimated that 150 enlisted in the Regular Army and in the regiments from the States, and some of whom are now with the army in the Philippine Islands. Thus, New Mexico has furnished 1,089 soldiers for the late war, and would and could have furnished many more had the opportunity been afforded us.

The old residence of the governor-generals under Spanish and Mexican rule, known as the "Palace," which for more than three hundred years has been the headquarters of the governors, captain-generals, and chief executives of the Territory, Province, or Kingdom, is in an admirable state of preservation, owing to the liberal appropriations made by the Congress in the past, but unless the General Government continues

to look after this historic building, as it has in the past, it will go to ruin and decay.

Appropriations are asked for increase of salary of governor, for a private secretary to chief executive, contingent expenses of governor's office, and increase of salaries of the five judges in the Territory. The sums now set apart for the above purposes are entirely inadequate, owing to the increased duties of the officials and the expenses attached to their respective offices.

The Governor strongly urges the early admission of New Mexico as a State of the Union.

INSPECTORS OF COAL MINES IN THE TERRITORIES.

By act of Congress approved March 3, 1891 (26 Stat. L., 1104), the President was authorized to appoint, at an annual compensation of \$2,000 each, a mine inspector in each organized or unorganized Territory of the United States wherein were located coal mines, the aggregate annual output of which should be in excess of 1,000 tons per annum. Appropriation was originally made for three of such officers, and inspectors appointed for the Indian Territory and the Territories of New Mexico and Utah. The office of inspector for the latter Territory, however, ceased to exist on the 4th of January, 1896, upon the admission of Utah as a State.

INDIAN TERRITORY.

Luke W. Bryan, mine inspector, reports that the past year has been notably free from strikes or labor trouble.

During the past five years the coal production has increased 50 per cent, but the number of men employed remains about the same, owing to the introduction of electric machinery and other labor-saving devices. All the requirements of existing law for the protection of the lives of the miners have been complied with by the companies operating in the Territory.

The most rigid rules are in force in the mines regarding the setting of props and timbers to hold up the roofs to insure the safety of the men in their working places, and a system of shot firers is provided in every mine where gas and inflammable dust exist and where explosions are liable to occur by reason of windy or blown-out shots. In every mine in the Territory that generates gas, men specially employed for the purpose visit each and every room or working place and mark the same with the day of the month on the face of the coal, and, in case gas is found, mark or deadline the entrance, so that none may pass it until the same has been cleaned out. This course is always pursued before the hour for commencing work in the morning, and the men are then notified to enter their working places. None but competent men are employed to handle the machinery, and there has been no accident

during the year caused by bad handling of hoisting machinery where men are hoisted or lowered.

The output of coal for the fiscal year was 1,438,028 tons, an increase of 103,622 tons over the preceding year, and the number of men employed 3,529, an increase of 59 from the year 1897.

There are 20 companies operating 41 mines in Indian Territory, and new mines are being constantly developed. The output of coke was 24,810 tons, a decrease of 630 tons from the previous year. There are two companies with coke plants having 130 ovens in operation.

The number of accidents during the year was 51, against 46 the preceding year, of which 17 were fatal.

The inspector directs attention to the provisions of the Act of Congress approved June 28, 1898, "For the protection of the people of the Indian Territory," known as the "Curtis bill," relative to coal and other minerals in the Territory, and expresses the hope that in execution thereof parties contemplating the development of valuable coal fields, as well as other minerals in the Territory, may be encouraged to proceed with their operations.

The report details the changes and extensions of the coal-mining business during the year and the operations and statistics of each mine and also gives copies of the rules governing the same.

NEW MEXICO.

John W. Fleming, mine inspector, reports that the mines throughout the Territory are in good condition, and there has been a large increase in the amount of coal mined as compared with previous years. The mines have all been systematically inspected during the year, and all suggestions for their betterment and welfare of employees have been cheerfully and promptly complied with by those in charge of their management.

The roadways of the mines are kept sprinkled to avoid dust explosions; safety lamps are used in all places where gas is known to generate, and the miners are supplied with sufficient props and timbers to secure their working places against all danger.

The provisions of the mining law relative to ventilation, outlets, and safety appliances to protect the miners have been faithfully observed. The main problem, however, which confronts the mine inspector, he states, is to get the miners impressed with the necessity of looking out for themselves and using ordinary precaution in their own behalf.

The number of mines in operation is 20; not in operation, 7; new mines in course of development and producing, 2. The production of coal during the year was 858,583 tons, being an increase of 125,044 tons over the preceding year. The estimated value of the entire output at the mines was \$1,408,680, an increase of \$211,765 over last year. The amount of coke produced during the year was 2,275 tons.

The total number of persons employed in and about the mines is stated to be: Miners, 1,485; day men, 373; boys, 30; a total of 1,888; an increase over the preceding year of 523. The total number of accidents was 21, of which 7 were fatal.

Of the 20 mines operated this year a majority of them are worked by the slope, double entry, room and pillar method, while the others are drift, double entry, room and pillar, or drift, single entry, room and pillar. The manner of ventilation is mainly by furnace or fans.

The inspector calls attention to the fact that there are no Territorial laws governing the coal-mine industries; that the Federal mining law now in force, under which he is operating, is inadequate, and should be amended by Congress in many respects, notably so as to the placing of such restrictions on the manner of handling powder as will insure greater safety and protection to the miners.

NATIONAL PARKS AND RESERVATIONS.

THE YELLOWSTONE NATIONAL PARK.

This is a tract of land near the head waters of the Yellowstone River, in the States of Montana and Wyoming, dedicated and set aside by the act of March 1, 1872 (17 Stat., 32), as a public park or pleasure ground for the benefit and enjoyment of the people. It is 62 miles in length from north to south, 54 miles in width from east to west, and contains about 3,348 square miles, or 2,142,720 acres. Its area is greater than that of the States of Delaware and Rhode Island combined. The average altitude is about 8,000 feet.

Capt. James B. Erwin, United States Army, the acting superintendent, reports that he assumed charge November 15, 1897, relieving Col. S. B. M. Young, United States Army, who had been ordered to active military duty, and has continued in charge since, except from March 13 to July 11, 1898, when he was on detached service, during which time Lieut. G. O. Cress, United States Army, performed the duties of superintendent.

During the winter of 1897-98 much vigilance was exercised on the part of the officers, men, and the scouts stationed in the park to protect the game from poachers, necessitating frequent trips on snowshoes to the sections of the park where the wild game is mostly to be found. Several poachers were arrested, subsequently convicted upon trial, and fined. Previous to June 1, at which date the stages begin their summer travel, crews were sent over all the roads, snow and fallen timber removed, and the roads otherwise repaired, making them safe for travel.

To meet the various demands of the public, different classes of transportation have been provided through the park, viz: Regular stage lines, steamboat transportation on Lake Yellowstone, licensed and private transportation, whether by wagon, pack train, horseback, or

bicycle. The former is represented by the Yellowstone National Park Transportation Company, running its stages from Cinnabar, Mont., on the north of the park, the railroad terminus of a branch line of the Northern Pacific Railway, and over the usually traveled route of tourists, via Mammoth Hot Springs, Norris, Upper Geyser Basin, over the continental divide to Yellowstone Lake, Canyon, Norris, Mammoth Hot Springs, and thence to Cinnabar. The Monida and Yellowstone Stage Company (Humphrey & Haynes) enter the park at Riverside, from Monida, a station on the Oregon Short Line, and travel over the same route as the other stage line, as follows: Fountain Hotel, Upper Geyser Basin, over continental divide to Yellowstone Lake, Canyon, Norris, Mammoth Hot Springs, Norris, thence via Riverside to Monida. The steamboat company operates one steamboat, which makes a daily trip on the lake. Licensed transportation includes a number of individuals who are licensed to personally conduct parties through the park, furnishing the necessary camp equipage and food.

The changes in the road system of the park during the past year and those contemplated for the coming year are as follows: The main traveled road, cut off Elk Park to Gibbon Meadow, is now completed and used by park transportation companies; the road along Madison River from falls of the Firehole River to boundaries of park completed and used by the Monida and Yellowstone Stage Company; road from Upper Geyser Basin to Lone Star Geyser, is being used by the same company; road is projected from Canyon Hotel to Yancey's.

The total number of tourists visiting the park from opening of season (June 1) to September 30 was 6,534. The aggregate number carried over the regular route by the Yellowstone National Park Transportation Company was 2,196, and by the Monida and Yellowstone Stage Company, 234; aggregate number carried through by licensed transportation of personally conducted camping parties, 890; aggregate number carried through in private transportation, 3,437; bicyclers, foot travelers, etc., included. During the season 2,256 tourists took the trip across Yellowstone Lake on the steamboat of the Yellowstone Lake Boat Company. Of this number, those who came into the park by the regular stage lines numbered 1,225, and those who went through the park by other means of transportation numbered 1,031.

The regulations for government of the park, established and enforced, though sometimes misunderstood and not appreciated by a few of the travelers of the park, seem to fully and completely accomplish the object for which the park was set aside, and the intentional violators of such rules and regulations of the park have been very few.

The system of enforcing them is by means of soldiers stationed at nearly regular distances on the usually traveled routes, who patrol same, and especially by guards from these stations, who are always present at the most interesting points, thereby preventing their dese-

cration and the destruction of the natural phenomena. It has been in force for some years, and no better could be devised.

A complete and accurate record of all who enter and travel through the park is kept by the soldiers stationed at the various points in the reservation, except those who enter by the stage lines, a record of whom is kept at the hotels.

There has been no intentional violation of terms and conditions of any lease during the past year. During the season the Monida and Yellowstone Stage Company have constructed three barns, each holding from 8 to 12 horses, with additions for grain, and sleeping quarters for drivers and stock tenders.

The park has been exceptionally exempt from forest fires this year, due not only to the thoroughness with which the patrol work was done, but also to the growing carefulness in reference to fires exercised by camping parties and others. But two fires were reported, neither doing much damage, being brought under control by a detail of officers and men.

Leases held in the Yellowstone Park are as follows:

Yellowstone Park Transportation Company: Mammoth Hot Springs, 2 acres; Norris, 2 acres; Fountain, 1 acre; Upper Geyser Basin, 2 acres; Lake, 2 acres; Canyon, 1 acre, building, etc., for the accommodation of employees and stock.

Yellowstone Park Association: Mammoth Hot Springs, Mammoth Hotel and commissary; Mammoth Hot Springs, Cottage Hotel and Mammoth Barn; Fountain (Lower Basin), cottages; Fountain, Fountain Hotel and barn; Lake, Lake Hotel and barn; Canyon, Canyon Hotel, pump house, and barn; Upper Geyser Basin, hotel and barn (not yet constructed).

Yellowstone Lake Boat Company: Near Lake Hotel, 2 acres; Frank Island, 2 acres; Stevensons Island, 2 acres; Dot Island, 1 acre; West Thumb, 1 acre; Ways, 2 acres; Southeast Arm, 2 acres; Dot Island Game Corral, 2 acres; to be located by superintendent, 6 acres.

William W. Humphrey and F. Jay Haynes: At Upper Geyser Basin, Thumb, Lake Outlet, Grand Canyon, Norris Geyser Basin, Mammoth Hot Springs, not to exceed 1 acre at each point; building, etc., for the accommodation of employees and stock. (Assignments not yet made.)

Jennie H. Ash: Mammoth Hot Springs, dwelling, post-office, and store.

Ole A. Anderson: Mammoth Hot Springs, dwelling and store.

John F. Yancy: Pleasant Valley, hotel.

F. J. Haynes: Mammoth Hot Springs, studio; Upper Geyser Basin, studio.

Henry E. Klammer: Upper Geyser Basin, dwelling and store.

The Yellowstone Park Association owns and controls, under lease from the Department, hotels at the following places in the park: Mammoth Hot Springs, Lower Geyser Basin, Yellowstone Lake, and Canyon; also lunch stations at Norris Geyser Basin, Upper Geyser Basin, and Yellowstone Lake. The hotels are all so located as to stage travel that tourists using this transportation always finish up their day's journey at a hotel; the lunch stations being merely places to obtain noonday refreshments en route. The hotels have been well conducted, but the association reports that the business has been carried on at a loss of about \$25,000.

It asks to be relieved for the present of the responsibility of constructing a new and much needed hotel at Upper Geyser Basin, which, under its lease of ground at that site, is to be completed in time for the tourist season next year. Frequent demands have been made for a hotel at this wonderful spot; besides, by the erection of this hotel, the present route through the park will be so divided up that much fatigue and discomfort to the tourist will be avoided.

Permanent camps were established during the year by W. W. Wylie, under contract with the Department, at the following points: Apollinaris Spring, Upper Geyser Basin, Yellowstone Lake, and Canyon, besides lunch stations at a point about midway between Norris and Lower Geyser Basin, near the Yellowstone Lake.

These camps seem to fulfill a demand on the part of a certain number of travelers in the park who wish to enjoy whatever benefits and pleasure may be received from camp life. Inspections made from time to time found them all neat and clean.

Frequent inspections have been made of all stage lines and other transportation, of the hotels, lunch stations, the permanent camps, and of the steamer on the Yellowstone Lake. The transportation lines have given excellent service to their patrons; their horses and vehicles are always in first-class condition and their personnel polite, courteous, and efficient. The hotels are thoroughly clean and neat, the food of the best quality and the service excellent, and fulfill every requirement of the traveling public. No complaints have been made.

The camps and lunch stations are neat and clean and have given satisfaction.

A number of trips were made on the steamer on Yellowstone Lake; it was always found to be in perfect condition and thoroughly safe.

Game in the park, excepting buffalo, is reported as increasing in numbers, and especially is this true of deer, elk, antelope, moose, and mountain sheep. Black bear are very plentiful and have proved very destructive to the stores of the troops on station, lunch stations, and campers. If they continue to increase in the future as in the past, it will be necessary to take steps to rid the park of the yearly increase. They are numerous at the garbage piles of the hotels, and are objects of much interest and enjoyment to the tourists. The acting superintendent estimates that there are probably 50 buffalo yet in the park, and he attributes the fact that they are not increasing to too much interbreeding. He believes with new stock introduced into the herd an increase would follow. Coyotes are very numerous in certain sections, and they do some damage to the young elk, but the young deer and antelope are their particular prey. Beaver are more plentiful than ever before, and their locations are carefully watched and protected. Otter are abundant; martens plentiful; foxes are in goodly number, and there are many muskrats.

The many streams and lakes were largely stocked in the past with

fish; the latter have multiplied, despite the enormous quantity caught yearly, and there is yet an abundant supply in all the streams.

The acting superintendent recommends the construction of a new road from the Canyon northward, following the canyon of the Yellowstone River, over Mount Washburn, and thence by way of Tower Creek to Yancey's, and thence to Mammoth Hot Springs. From the Canyon to Yancey's by the eastern trail the road will be about 23 miles long and can be built for \$45,000.

From Yancey's to Mammoth Hot Springs is 20 miles. Some 4 or 5 miles of this road was built last year, leaving some 15 miles to construct, costing about \$15,000, making \$60,000 in all. The acting superintendent recommends that this amount be appropriated for this specific purpose in addition to the usual appropriation for the protection and improvement of the park. The construction of this road will obviate the necessity of visitors going over from 28 to 42 miles of the same road twice.

Appended to the report is a map of the park and forest reserve, showing the change in the road system since last year.

Under date of February 1, 1898, there was transmitted to Congress a report made on the 12th of January, 1898, by Col. S. B. M. Young, Third United States Cavalry, then acting superintendent of the park, recommending the extension of the limits of the park, and submitting a draft of a bill with a view to carrying the same into effect.

The boundaries, as suggested in said bill, which are indicated on a map accompanying the same, would extend the limits of the park so as to embrace the Yellowstone Timber Land Reserve, which lies on the east and south boundaries of the park, and comprises about 1,914 square miles; all that portion of the Teton Forest Reserve lying east of the summit of the Teton Range and comprising about 1,050 square miles, and adjoins the Yellowstone Timber Land Reserve on the south; together with an unreserved area of about 30 square miles at the southwest corner of the park in Idaho, and an unreserved area of about 260 square miles at the northwest corner in Montana.

In the forest reserves are fine bodies of timber which it is important should be preserved from fires because of its value as timber, as well as the protection to watersheds and against fires running into the park.

It is reported that during the winter months the large game from the National Park herd roam, to a very considerable extent, in the areas proposed to be included within the park, and they should have all protection possible from destruction by marauders who are constantly on the watch for game as it roams out of the park limits. The State game laws are applicable to the forest reserves and, for this reason, it is impracticable to prevent the killing of game in the reserves in the same manner and to the same extent as it is prohibited in the park. The superior discipline of regular troops makes a more effective patrol than the civil forest officers; and cavalry can cover a greater extent of ter-

ritory with more expedition, and is better able to cope with trespassers than are forest rangers.

In view of the importance of protecting this country, which has an international reputation on account of its scenic beauties, and to throw additional safeguards about the big game whose natural home is the National Park, and to protect more effectually the timber embraced in the forest reserves adjoining the park, I think it a wise policy that the additional areas herein described be embraced in and placed under the laws and management relating to the Yellowstone National Park.

Since the transmission of the bill hereinbefore referred to for the consideration of Congress, petitions have been made to the Department by residents of the State of Wyoming in favor of including the portion of the timber-land reserve abutting Yellowstone Park on the south within the metes and bounds of the present Teton Forest Reserve, and the addition to the latter of certain public lands on the south frequented largely by game, and the creating therefrom of a new national park, to be managed separately from the Yellowstone.

The claims of Mr. Baronett, on account of a bridge built by him over the Yellowstone River, and those of Messrs. McCartney and McGuirk, respectively, for improvements made within the park prior to the act of dedication, are equitable and just, and payment of them should not be longer delayed. Recommendations have been made in the annual reports of my predecessors, as well as in my last annual report, that Congress make proper appropriation for the adjustment of their claims. These recommendations are renewed, as in my judgment all proprietary rights within the park should be removed.

SEQUOIA, YOSEMITE, AND GENERAL GRANT NATIONAL PARKS.

Sequoia Park is located in Tulare County, Cal., and has an area of about 250 square miles. It was set aside by act of Congress approved September 25, 1890 (26 Stats., 478), and was placed under the exclusive control of the Secretary of the Interior, with authority to prescribe rules and regulations necessary or proper for the care and management thereof, etc.

Yosemite National Park is situated in Tuolumne, Mariposa, and Mono counties, Cal., and entirely surrounds the tract of land known as Yosemite Valley, granted by the act of Congress approved June 30, 1894, to the State of California as a public park. It covers an area of about 1,512 square miles, being 36 miles wide and about 42 miles long.

General Grant National Park is situated in Mariposa County, Cal. and contains about 4 square miles.

The lands embraced in these two parks were set aside by the act of Congress approved October 1, 1890 (26 Stats., 650), as "reserved forest lands," and authority was conferred upon the Secretary of the Interior to prescribe regulations for the government thereof.

In the Sequoia and General Grant parks, respectively, are found the finest specimens of the *Sequoia gigantea*, the famous "big trees" of California.

Rules and regulations for the government of these parks were promulgated by the Department in 1890, and have continued in force to the present time without modification. No penalty has ever been fixed by Congress for the violation of the regulations so issued, and the only penalty that it has been practicable to impose upon persons in the parks violating the same is that of ejection from the reservations with such force as the circumstances demanded.

In October of 1890 the Department brought to the attention of the Secretary of War the fact that the great regions covered by the acts of Congress above referred to had been segregated from the public lands; that the Secretary of the Interior was charged with the care thereof, but that no provision had been made by Congress to enable him to do so, and the details of officers and troops for the purpose of providing the necessary protection for such reservations was solicited. This request was complied with, and the detail of troops for the protection of said parks has been renewed each year thereafter. The customary assignment of troops was made early in the spring of this year for the protection of these parks, but before their arrival on the reservations the exigencies of the service, consequent upon the war with Spain, necessitated their withdrawal in order that they might form a part of the army for duty in the Philippine Islands.

That large portions of the lands within the metes and bounds of these reservations afford excellent grazing facilities for sheep and cattle, is well known in California; realizing this fact and owing, no doubt, to the lack of vegetation on the usual grazing grounds, consequent upon the severe drought which existed during the summer in the southern part of California, and the necessity for seeking food for their herds in other localities, sheep and cattle men took advantage of the absence of the troops usually assigned for the protection of the parks, to drive their animals into the reservations for the purpose of grazing on the park lands, practically overrunning them, greatly to their injury, and doing considerable damage.

Immediately upon this unlawful occupation of the park lands being brought to the attention of the Department, measures were taken to prevent a continuance thereof. Notwithstanding the fact, however, that warning was given through the medium of the public press that trespassing on the park lands was in violation of the regulations prescribed for the government thereof, and ample time afforded stockmen to remove their trespassing sheep and cattle from the parks, they failed to do so. Thereupon I directed Special Inspector James W. Zevely to proceed from Washington to the parks in California and to warn the public by posters and advertisements in the press against trespassing on the lands within the metes and bounds of the Yosemite, Sequoia,

and General Grant parks, and to take such measures as were necessary to eject trespassing cattlemen and sheepmen and their herds from the park lands, taking note of the names of the offenders, with a view to the institution of suits against them should such course be deemed advisable.

To assist him in the work, it became necessary to call to his aid the special forest agents located in California. Subsequently, upon appropriation being made by Congress at its last session for the protection of the Yosemite Park, I appointed ten assistant superintendents to take the place of the forest agents, but their services were only required for one month. Special Inspector Zevely was designated as acting superintendent of these parks, and energetically prosecuting the work intrusted to him, removed from Yosemite Park approximately 189,500 sheep, 300 horses, and 1,000 cattle, and from Sequoia and General Grant parks approximately 45,000 sheep, and in addition thereto, succeeded in extinguishing several large fires occurring in the park, the latter in all probability originating through the carelessness or maliciousness of the sheep and cattle herders who were being ejected from the reservations.

Special Inspector Zevely's services being required in the examination of other matters connected with this Department, the Secretary of War, at my earnest solicitation and considering the exigencies of the case, detailed for duty in the parks a company of Utah volunteer cavalry. Capt. Joseph E. Caine thereupon assumed charge of the management of Yosemite and General Grant National parks on September 23, 1898, and Lieut. Benner X. Smith was assigned to duty in Sequoia Park. These officers and their men were engaged on this assignment and prosecuted the duties intrusted to them in as vigorous a manner as the force in their respective commands permitted until October 29, 1898, when by reason of the approach of winter they were withdrawn for the season.

The organic acts setting aside the lands embraced within these parks provide no penalty for the violation of any of the provisions of the regulations for the management thereof prescribed by the Secretary of the Interior, and trespassers have therefore entered upon the park lands, knowing that the only remedy at the hands of the Government for violation of the regulations was by ejectment. Experience has demonstrated that this penalty has not been sufficient to deter them from entering the park lands for the purpose of killing game or grazing sheep or cattle if their own interests warrant them in pursuing such course. Congress should therefore provide suitable legislation, such as has recently been enacted regarding the Yellowstone National Park, for the proper punishment of persons who violate the park regulations, and I shall at an early date submit to that body a form of bill which, in my judgment, will remedy the existing defect in the law.

In the several annual reports of my predecessors, as well as in that submitted by me to you for the last fiscal year, the fact that there are numerous private holdings on these reservations was adverted to. The aggregate acreage of these lands in which the Government has wholly parted with its title may be stated, approximately, to be 55,064 $\frac{2}{100}$, and that in which title has not fully passed from the United States to be 367 $\frac{275}{1000}$ acres, divided as follows: In the Yosemite National Park, 53,931 $\frac{15}{100}$ acres of patented lands and three claims embracing 327 $\frac{275}{1000}$ acres on which patents have not yet issued; in the Sequoia National Park, 972 $\frac{27}{100}$ acres of patented lands and one claim of 40 acres on which patent has not yet issued; and in the General Grant National Park, 160 acres of patented lands.

The right of owners, transferees, or lessees of such lands to the use thereof for lawful purposes has always been recognized by the Department, and there has been practically no interference in the use of such property except where it was desired to cut timber therefrom or graze sheep or cattle thereon; in such cases it was first required that the metes and bounds of such lands be properly marked and defined, so that it might be easily determined whether the lands from which timber was cut or on which stock grazed was within the limits of patented lands or on the reservation lands. Furthermore, that in removing timber from the reservations or taking animals to and from patented lands, it must be done under the supervision of the acting superintendent of the park, and over the roads and trails within the park.

Although this requirement is a reasonable one, it has been found to be extremely difficult of enforcement. Persons controlling these patented tracts have leased the same to stockmen, well knowing the conditions upon which their use would be permitted by the Government. The latter, whether with knowledge of the Departmental regulations or not, have taken their herds to these patented lands for grazing purposes, and have permitted their herders to graze their animals upon the park lands, making but little effort to keep them within the limits of the patented lands. These depredators have caused much trouble, and the greater part of the time of the park force has been taken up in ascertaining the location of the herds within the parks and their subsequent ejection if found roaming on the reservation lands.

As long as these private interests are permitted to remain within these reserves, just so long will there be trouble and annoyance to this Department in their protection. Some provision should therefore be made at an early day looking to the extinguishment of these holdings in order that the reserves may be, as an entirety, the property of the Government, as in that way alone are they susceptible of being satisfactorily protected. To that end, therefore, I have to recommend that so much of the act of Congress approved June 4, 1897 (30 Stats., 36) as permits the relinquishment by owners of tracts of land in the sev-

eral forest reservations and the selection in lieu thereof of vacant lands in other localities which are open to settlement, be extended to these parks.

From the time these parks were set aside in 1890 and placed under the control of this Department no appropriation has been made by Congress for their protection up to the end of the last fiscal year. Upon my urgent solicitation, however, and presentation of the pressing necessity for providing means to protect these reservations, Congress at its last session made a small appropriation for the protection of the Yosemite Park, a portion of which was used in the ejecting of sheep and cattle men from that park, and the subduing of forest fires, etc., therein. This appropriation should be renewed during the coming year for the Yosemite Park, and appropriations should also be made for the proper protection of the Sequoia and General Grant National parks, the same necessity existing for the protection of the one as for the other; and I have, therefore, to earnestly recommend that appropriations for the protection of these reserves be made as recommended in the annual estimates for this Department, which will be submitted to Congress through the honorable the Secretary of the Treasury.

HOT SPRINGS RESERVATION.

By the act of April 20, 1832 (4 Stats., 505), the Hot Springs, in the Territory of Arkansas, together with four sections of land, including such springs, were set aside and reserved for the future disposal of the United States.

By the act of March 3, 1877 (19 Stats., 378), the appointment of commissioners was authorized to lay out into squares, blocks, lots, avenues, and streets, certain tracts of land in the county of Garland, State of Arkansas, known as Hot Springs Reservation. Hot Springs Mountain, on which the Hot Springs were located, was reserved from sale, the appointment of a superintendent thereof by the Secretary of the Interior was provided for, and the levying of a special tax by the latter on water taken from said Hot Springs was authorized, the moneys arising from water rents to be used in improvement of the reservation.

By the act of June 16, 1880 (21 Stats., 288), those divisions of the Hot Springs Reservation, known as the mountainous districts, not divided by streets on the maps made by the Hot Springs Commissioners, but known and defined on the map in the report of the Commissioners as North Mountain, West Mountain, and Sugar Loaf Mountain, were forever reserved from sale and dedicated to public use as parks, to be known, with Hot Springs Mountain, as a permanent reservation. These reservations, together with the Whittington Avenue Lake Reserve, a tract of land in the city of Hot Springs, in which the title remained in the United States, aggregate 911.63 acres.

The hot water issues from the base and side of the Hot Springs Mountain and the actual quantity thereof is not known; that which is

under control and being used to supply the bath houses amounts to about 538,000 gallons daily, and the amount collected and passed through the impounding reservoir about 350,000, making a total quantity of hot water under control of about 888,000 gallons a day.

William J. Little, superintendent of the Hot Springs Reservation, reports that the principal improvements accomplished during the past year have been the completion of the Whittington avenue lakes and park, the improvement and extension of the roads and drives, and building additional walks and drainage on the permanent reservation.

One new bath house of 19 tubs has been added to the active list, bringing the total number of leases up to twenty-four; of these, twenty are active bath houses, two are sanitariums, one lease to the Hot Springs Medical Company for manufacturing medicines, and one lease to John J. Sumpter, under which no bath house has yet been erected.

The total number of tubs covered by all these leases is 538, requiring 538,000 gallons of hot water daily to supply them. Rating the bathing capacity of each tub at 15 persons per day, sufficient bathing accommodations are now provided for 8,070 persons daily. This is largely in excess of present requirements, or any that seem likely to be made soon. The whole number of baths given by them has been 324,207, and the total number of baths given during the year, including 184,690 given by the free bath house, is 508,997.

The attendance of visitors this year has been larger than for some time past, and the bath houses have seemed to enjoy a good business for the first time in three or four years.

The following table shows the bath houses and bath-house sites on and off the reservation for which leases have been granted up to June 30, 1898:

Name of bath house.	Lessee.	Tubs.	Date of lease.	Expires.
<i>On the permanent reservation.</i>				
Arlington Hotel	S. H. Stitt & Co. (Samuel H. Stitt, Samuel W. Fordyce, Albert B. Gaines); assigned to Arlington Hotel Co.	.....	Mar. 3, 1892	Mar. 2, 1912
New Rector.....	Henry M. Rector and Mary E. Fellows; assigned to Arlington Hotel Co., June 11, 1892.	40	.....do	Do.
Hale.....	Logan H. Roots and George H. Eastman.	26	Jan. 1, 1893	Dec. 31, 1907
Imperial.....	James L. Barnes and Charles N. Rix; Barnes assigned one-half of his half interest to Charles N. Rix, June 30, 1892; Charles N. Rix assigned his undivided three-fourths interest to Fred. N. Rix, Oct. 20, 1896.	25	Jan. 1, 1892	Dec. 31, 1906
Lamar	Morris C. Tombler; M. C. Tombler assigned to D. C. Buckstaff one-third interest, May 10, 1898.	40	Jan. 1, 1897	Dec. 31, 1936
Magnesia	Charles B. Platt.....	30	Jan. 1, 1896	Dec. 31, 1926

Name of bath house.	Lessee.	Tubs.	Date of lease.	Expires.
<i>On the permanent reservation—Cont'd.</i>				
Horse Shoe	Alber B. Gaines assigned to D. Fellows Platt, July 30, 1896.	30	Jan. 1, 1897	Dec. 31, 1900
Palace	Samuel W. Fordyce.....	23	Jan. 12, 1893	Dec. 31, 1906
Maurice	Charles E. Maurice, Charles G. Convers, and William G. Maurice.	21	Jan. 1, 1897	Dec. 31, 1916
Ozark	George G. Latta and Lewis H. Carhart; Lewis H. Carhart assigned his interest to Isaac W. Carhart, May 23, 1895.	22	Jan. 1, 1892	Dec. 31, 1902
Superior	Robert Proctor and Samuel S. Wilson; Wilson assigned his one-half interest to Henry W. Myar, May 18, 1898.	16	Sept. 15, 1896	Sept. 14, 1906
Rammelsberg	George H. Buckstaff	18	Jan. 1, 1892	Dec. 31, 1898
<i>Of the permanent reservation.</i>				
Rockafellow s	Charles N. Rockafellow	20	July 1, 1895	June 30, 1898
Eastman	New York Hotel Co	40	May 12, 1892	May 12, 1912
Alhambra	Edward H., Anna M., and Carroll D. Bancroft, doing business under the firm name of the Alhambra Bath House Co. .	40	Feb. 28, 1894	Feb. 28, 1914
Avenue.....	Avenue Hotel Co.....	20	Jan. 1, 1898	Dec. 31, 1902
St. Joseph's Infirmary.	Sister Mary Aloysius, local superior of St. Joseph's Infirmary.	4	Dec. 31, 1896	Dec. 31, 1901
Hot Springs.....	Mark J. and C. H. V. Smith; assigned to Mark J. Smith Feb. 2, 1893.	16	Jan. 1, 1893	Dec. 31, 1902
Park	Park Hotel Co.....	40	May 12, 1892	May 12, 1912
Rector.....	Henry M. Rector.....	12	Apr. 16, 1894	Apr. 16, 1904
Waverly.....	New Waverly Hotel Co.....	20	Mar. 24, 1893	Mar. 24, 1913
Cheshire.....	Cheshire Improvement Co., Limited...	8	Aug. 7, 1895	Aug. 7, 1905
Sumpter	John J. Sumpter.....	8	Mar. 7, 1894	Mar. 7, 1904
	Hot Springs Medical Co. (500 gallons daily).	4	July 24, 1894	July 24, 1904
Great Northern Hotel..	Curnel S. Williamson.....	19	May 15, 1897	May 15, 1912

The free bath house has furnished free baths to a larger number of indigent people than any year since its establishment, and has either cured or greatly benefited at least 75 per cent of all persons to whom the baths were furnished. The bath house has been open continuously, and the average number of persons furnished baths daily has been 506; of these 297 were white men, 42 white women, 106 colored men, and 61 colored women.

A free dispensary was established in May, 1898, in the second story of the free bath house, under charge of Dr. H. O. Perley, United States Army, and much good has been done by way of medical advice to the indigent people who use free baths.

The Whittington avenue improvement, consisting of two small lakes and a park, has been completed within the amount of the appropriation of \$30,000, and was opened to the public on June 30, 1898, since which time it has been in constant use, and is much appreciated by

invalids now residing here. The area of this reservation is only 11 acres, nearly half of which is taken up by the lakes. The park, which covers the balance of the grounds, is even at this time, with only a half year's growth on the shrubbery and flowers, a beautiful park, and affords much pleasure and enjoyment to both visitors and citizens.

The hot-water drinking fountains, five in number, and the Fountain street cold spring are much resorted to and used both by visitors and citizens. The park, in the midst of which the springs rise and in which the fountains are located, is constantly kept in the best possible state of cultivation and is the distinctive and attractive feature of Hot Springs.

About 30 acres of the grounds on Hot Springs Mountain have been brought under cultivation for park purposes and much preliminary work has been done on from 30 to 40 acres additional. The roads and drives on the Hot Springs Mountain have received such repairs and attention as was necessary and have been in constant use. These drives enter the reservation through the main entrance on Central avenue, through the grounds of the Army and Navy General Hospital and from Fountain street, and are about $3\frac{1}{2}$ miles in length.

By act of Congress approved October 2, 1888 (25 Stats., 527), \$31,000 was appropriated for providing a system of reservoirs, pumps, piping, and for other purposes necessary to the collection and economical distribution of hot water on the Hot Springs Reservation. Pursuant to this authority a plan for the collection, impounding, and pumping of the hot waters was adopted and contracts for the work were let. Prior, however, to the completion of the work upon the system, in June of 1891, Congress passed a law on the 3d of March, 1891 (26 Stats., 844), the sixth section of which provided—

That the authority heretofore conferred upon the Secretary of the Interior to collect the hot water upon said reservation shall be so construed as to require water to be collected only where such collection is necessary for its proper distribution, and not where by gravity the same can be properly utilized.

All bath houses on the reservation are supplied by gravity, and those off the reservation where not supplied by gravity are required to pump the hot water from the impounding reservoir at their own expense. The effect of this law has been to render the use of the pumping plant unnecessary, and the pump has not been in operation since its installation. Directions have accordingly been given by the Department to the superintendent to remove these pumping engines from the pit in the pumping-station building and properly store them in another part thereof; also to fit up this building in a suitable manner so that it may be used as an office for the superintendent of the reservation, so that persons desiring information touching the reservation and the bath houses thereon may not be compelled to go to the present office building on Fountain street, which is considerable distance from the bath houses, to procure the same.

The part of the Hot Springs Creek Arch which traverses the reservation front requires attention and some repairs after almost every heavy rain. The walls are often undermined by the volume of water which passes through and the swiftness of the current. Such damage as has occurred has been promptly repaired and the arch is at present in good condition.

A table is submitted in the superintendent's report showing the number of tubs in each, the rate per course charged for baths, the cost of the bath house, the number of baths given, the amount received therefor, the per cent of gross earnings on the cost of the house, and the earnings per tub; also the number of attendants and helpers employed, and the amount paid to them for attendants' fees, by which it appears that the bath houses received for baths \$101,799 and the attendants \$33,870, making a total of \$135,669. The whole amount of money invested in bath houses in Hot Springs is \$569,733.

The solicitation of patronage for the bath houses is still being carried on, notwithstanding the efforts that have been made to suppress the same. The practice is continued largely through the instrumentality of physicians known as "drumming doctors," who pay their solicitors from 40 to 75 per cent of the fees received by them from the patients brought in for treatment. Of the 90 physicians practicing in Hot Springs, it is represented that from 40 to 45 solicit patronage, or practice through public or licensed drummers. The superintendent expresses the opinion that this evil can be corrected by the appointment of a board of three eminent physicians to examine and pass upon the qualifications of all the physicians practicing upon the reservation, and prescribing the use of the hot waters, and prohibiting bath-house lessees from bathing any person receiving medical advice from a physician who does not hold a certificate from such medical examining board. The authority, however, of the Department to prescribe a regulation under which such recommendation could be carried into effect is very doubtful.

The report recommends that the 157 platted lots in the reservation be disposed of by public sale in March or April, 1899, that time being regarded as a favorable one for such action.

The total receipts from bath houses and hot-water rents for the fiscal year ended June 30, 1898, is \$18,171.25; the disbursements by the superintendent for salaries, superintendence, repairs, fuel, lights, water, etc., \$12,388.16; disbursed through the Department for improvements on the reservation, \$6,517.52.

Of the original amount set aside from the moneys in the Treasury for the reservation fund for the improvement of the Whittington Lake Reserve there was expended during the year \$5,938.08, making a total expenditure of \$29,590.08, leaving an unexpended balance of \$409.92 on account of the allotment.

CASA GRANDE RUIN.

The Casa Grande ruin, located near Florence, in the Territory of Arizona, is one of the most noteworthy relics of a prehistoric age and people remaining within the limits of the United States. The land on which it is located is part of 480 acres reserved from settlement by Executive order dated June 22, 1892. At the date of discovery by one Padre Kino, in 1694, it was then in a ruinous condition, and since that time has been a subject of record by explorers and historians. This structure, like others erected by the most advanced among the native races in the Southwest, is of perishable material, being built of cajon—that is, of puddled clay, molded into walls, dried in the sun.

In my last annual report attention was directed to the necessity of a sufficient appropriation in order to provide a proper protection for this ruin from the elements. The custodian of the ruin, Rev. Isaac T. Whittemore, in a recent report, states that the walls are in a fair state of preservation, but can not continue so many years longer without a roof, as the detrition is from the upper edge, rain trickling down and leaving cracks. In order to prevent further disintegration of this historic relic, it is suggested that an appropriation of \$2,000 be made by Congress to be used for the protection and preservation thereof.

ELEEMOSYNARY INSTITUTIONS.

THE GOVERNMENT HOSPITAL FOR THE INSANE.

This hospital was established by act of March 3, 1855 (10 Stat., 682). It is managed by a board of visitors—nine citizens of the District of Columbia, appointed by the President—and it is supported in part by Congressional appropriations and in part by receipts from pay patients, the expenditure of which is under the general supervision of the Secretary of the Interior (sec. 4858, Rev. Stat.). The institution has an area of 350 acres of land, known as St. Elizabeth, from title of the original grant; also outlying agricultural lands of an extent upward of 450 acres. The 18 hospital buildings can comfortably accommodate 1,500 patients.

The title of the entire property is in the United States, and its estimated cost is something over \$1,000,000.

It is the only hospital for the insane in the United States which is exclusively under Federal control. The law provides for the admission thereto of the insane of the Army (including civilians becoming so diseased while in the employ of the Quartermaster's and Subsistence Departments) on the order of the Secretary of War; the Navy and Marine Corps on the order of the Secretary of the Navy; the Revenue-Cutter Service, and Marine-Hospital Service on the order of the Secretary of the Treasury; inmates of the National Homes for Disabled Volunteer Soldiers on the order of the president of the Board of Managers of the Homes; inmates of the Soldiers' Home of Washington,

D. C., on the order of the president of the Board of Commissioners of the Home; insane United States convicts: persons charged with offenses against the United States and in the actual custody of its officers when found to be insane, and persons charged with the crime before the courts of the District of Columbia, on the order of the Secretary of the Interior; and the indigent insane of the District of Columbia on the order of the Commissioners of the District of Columbia. The words "insane persons" and "lunatic" are defined in the Revised Statutes of the United States as including every idiot, non compos, lunatic, and insane person; hence imbecile and weak minded persons are frequently sent to the hospital from the District of Columbia.

The annual report of the board of visitors shows that during the year 2,204 persons have been under treatment, nearly 100 more than any previous year; 351 have died or were discharged: 1,853 remained in the hospital June 30, 1898. The number of admissions, 437, has not been exceeded since the closing years of the civil war, and is attributed to the increase of the Army and development of the Navy since war was declared against Spain. The number of deaths, 197, was 8.94 per cent of the whole number under treatment, which is more than 1.5 per cent above that of the previous year, and is attributable to the advancing age and incident infirmity of a majority of the inmates rather than to any prevailing disease.

Congress, at its last session, provided for a survey of the flats along the Eastern Branch of the Potomac abutting the hospital property, looking to their reclamation in the near future. The importance of this work is commented upon and the hope expressed that it may progress without interruption to the transformation of the noisome flats into hygienic pleasure grounds.

Extensive building operations have been carried on during the year. A group of four buildings of the pavilion type for infirm soldiers and sailors from the National Homes has been completed. These buildings afford an indoor and outdoor provision for 100 bedridden and feeble men. An extension to the building for colored males is well under way.

There were 362 colored inmates remaining under treatment at the close of the year, of whom 209 were males and 153 females.

The commitments, by the Secretary of the Interior, of insane persons from the District of Columbia to the Government Hospital for the Insane was for many years made pursuant to the provisions of sections 4844, 4845, and 4846 of the Revised Statutes of the United States, the question of sanity being determined by the sworn statement of two respectable physicians. This procedure was undoubtedly intended by the Congress which enacted the law to be all that was necessary to determine the sanity and provide for the care of the unfortunate person. The supreme court of the District of Columbia, however, in a decision rendered in *re Bryant* (3 Mackey, 439), a pay patient committed under sections 4853 and 4854, Revised Statutes of the United

States, held such commitment to be without authority of law, inasmuch as no jury trial had been had to determine the question of his sanity. Subsequently, the rule laid down in this case was held to apply to persons committed under sections 4844, 4845, and 4846, Revised Statutes of the United States, Mr. Justice James, in delivering the opinion of the court, stating, in effect, that the whole matter of the care of insane persons in the District of Columbia is regulated by the Maryland act of 1785, which contemplates an inquiry as to sanity by a jury.

Following this judicial decision the mode of procedure has been changed, and residents of the District of Columbia are now brought before a marshal's jury, their mental condition ascertained after the antiquated procedure of the Maryland law of 1785, before they are committed to the hospital by the District authorities.

The attention of the Joint Select Committee of Congress to Investigate Charities and Reformatory Institutions in the District of Columbia was called to the abuse under this procedure, as well as to the accumulation of nonresident insane from the District in the hospital from the want of power or funds on the part of the District authorities to remove them, and the committee communicated with the Secretary of the Interior regarding the matter. The board of visitors to the hospital, at the instance of the Department, caused a bill to be prepared which, in their opinion, not only provided an efficient procedure for admission to the Government Hospital for the Insane, but protected the United States and the District from the expenses and charge of insane persons who did not reside in the District at the time they became mentally disqualified. This bill, which was transmitted to the joint committee by the Secretary of the Interior for favorable action by Congress, is of the utmost importance and should become a law at an early day.

In the sundry civil bill approved July 1, 1898, Congress provided for the legal custody of funds belonging to inmates of the Government Hospital for the Insane and coming into the hands of the hospital authorities, by authorizing the superintendent to deposit the same in the United States Treasury in his name as agent, drawing from the same by check from time to time as needed, under regulations prescribed by the Secretary of the Interior, and giving a separate bond for the faithful performance of the duty thus devolved upon him.

These regulations, copy of which is hereto appended (Exhibit H), have been promulgated by the Secretary of the Interior and funds of the character referred to in the act are now disbursed in accordance therewith.

The amount required for current expenses (support, clothing, and treatment) for the institution during the year ending June 30, 1900, is estimated at \$407,000. This is based on an annual cost of \$220 per capita for an estimated average number of 1,850 persons of the various classes at the institution.

Appropriations are solicited, of \$15,000 for general repairs and improvements; \$25,000 for a chapel building; \$4,500 for a slaughter-house, mule stables, and cart sheds on stock farm; \$6,000, central plant for hot-water piping; \$5,000 for renewing plumbing and tiling baths and toilets, two sections old buildings; \$2,500 for continuing brick pavements; \$2,500 for erecting three fire escapes, with stand-pipe and hose; \$1,500 for furnishing west lodge extension, a building for colored male patients; \$5,000 for fireproofing floors, brick partition, and piazzas, Atkins Hall, and \$31,250 for additional accommodations, cottage provisions for working patients.

A deficiency appropriation of \$12,003 for support, 1898, and \$22,000 for support, 1899, is also asked for, necessitated by an increase of nearly 100 patients in excess of number estimated for 1898 and 1899 and an advance of over \$10,000 in prices of supplies for 1899.

THE FREEDMEN'S HOSPITAL AND ASYLUM.

The Freedmen's Hospital was appropriated for and placed under control of the Secretary of War by act of March 5, 1871 (16 Stats., 506), and transferred to the Department of the Interior by act of June 23, 1874 (18 Stats., 223). It occupies $3\frac{1}{2}$ acres of leased ground in the District of Columbia, on which are eight buildings. Six were constructed by the lessors, and two, at a cost of \$4,000, under appropriation by Congress therefor. Five buildings used for hospital purposes have a capacity for 250 patients. The remaining three are administrative buildings. The title of property is in the trustees of the Howard University, and its estimated value is \$304,000. The supervision and control of expenditure of appropriation was transferred to the Commissioners of the District of Columbia by act of March 3, 1893 (27 Stats., 551). The appointive and general administrative power, however, is still vested in the Secretary of the Interior.

For some time subsequently to the rendition of the last annual report it was apparent that the condition of affairs at Freedmen's Hospital and Asylum was such as to necessitate changes in its internal management. Action, however, in the matter was delayed in view of the fact that a joint select committee of the Senate and House of Representatives were engaged in making an investigation of the charities and reformatory institutions of the District of Columbia, and it seemed probable that as a result of the action of such committee this Department might be relieved of the supervision of the hospital.

On May 12, 1898, in consequence of the growing urgency of the case, appointed George W. Evans, John J. Darby, M. D., and William T. Lerson, of this Department, a board of visitors to the Freedmen's Hospital and Asylum, with instructions to make a thorough inquiry as to the exact condition of affairs at the institution. As a consequence of their report, which, pursuant to a resolution of the Senate dated June 30, 1898, was submitted to that body (Senate Doc. 352, Fifty-fifth

Congress, second session), a new classification of the employees was made, many irregularities in the administration methods were corrected, and rules and regulations for the government of the hospital were prescribed.

Inasmuch as the joint select committee above referred to has not yet fully completed its labors, I refrain from making any recommendations for legislative action touching this hospital and its management.

Dr. A. M. Curtis, surgeon in chief, reports that the number remaining in the hospital June 30, 1897, was 150. During the year 2,149 patients were admitted, of whom 1,393 were males and 576 females; 206 children were born, making a total of 2,205 in the hospital; 2,085 patients were discharged and 172 died, leaving 148 remaining in the hospital on the 30th day of June, 1898.

Of the 2,149 patients admitted, 658 were natives of the District of Columbia, 80 of foreign countries, and the remainder (1,401) of the several States and Territories.

In the surgical department there were 234 operations, many of them of a difficult character. Of these 214 were cured, 11 improved, 4 unimproved, and 5 died. There were 855 visits to the eye-and-ear department—683 for treatment of the eye and 172 for treatment of the ear. In the obstetrical department there were 206 patients. The number treated in the out-patient department was very large, aggregating 2,786.

In the training school for nurses 70 formal applications for admission were received; 17 were admitted on probation, 13 were accepted, and 3 dismissed. Seventeen graduated in May, and there are 32 nurses enrolled in the school at present.

The buildings and grounds occupied by this institution have been leased from Howard University at the rate of \$4,000 per annum. The contract, however, has provided usually that the medical college connected with Howard University shall be accorded clinical facilities in connection with Freedmen's Hospital. As a result of the latter the relations between the Howard University and Freedmen's Hospital have been very close. The surgeon in chief calls attention to the fact that the buildings occupied do not properly accommodate the institution, are badly in need of repairs, and that if it is intended to continue the hospital as a Federal institution Congress should provide better and more modern hospital buildings.

The surgeon in chief also directs attention to University Park, which faces Freedmen's Hospital, and states that it is a grave menace to health, that "the reservation is overgrown with noxious ferns and weeds, matted with filth and rubbish after each rainfall. This pollution floods the hospital grounds to the depth of several inches. The reservation during the day is made a camping ground by the vicious lazy, while at night it affords a safe retreat for tramps and criminals. He urges that the attention of Congress should be called to them.

in order that some steps may be taken to make such improvements as are necessary to prevent disease and add to the appearance of the park.

Appended to the report are tabulated statistics of the hospital for the year ended June 30, 1898.

HOWARD UNIVERSITY.

Howard University was established by act of March 2, 1867 (14 Stats., 438), "for the education of youth in the liberal arts and sciences." It is managed by a board of trustees, on which Congress is represented by one Senator and two Representatives. It is supported in part by funds from benevolent societies and in part from appropriations by Congress.

No tuition is charged, except in the medical school. The expenditure of the Congressional appropriations is under the supervision of the Secretary of the Interior. The area of grounds controlled by the corporation located in the District of Columbia is about 20 acres, the title of which inheres in the trustees. There are five administration buildings and five dwellings used by the corps of instructors. The estimated value of the entire property is about \$550,000.

The president, J. E. Rankin, D. D., reports that the university is in a flourishing condition, and never has been so well attended as during the past year, the number of pupils being 623, as against 598 for the previous year. Excellent progress in the work has been made, and the standard of the school has been materially raised.

The pupils come from 37 different States and Territories and also from Burma, Bulgaria, Canada, Korea, Japan, Switzerland, Turkey, the West Indies, and South America. A large percentage of the students come from places outside of the District of Columbia, and though they are entitled to no school privileges here, are taught as economically as they could be elsewhere.

The university has six departments: The preparatory, in which 101 students entered and 13 withdrew, leaving 88 in attendance; the collegiate department, in which 44 entered, 8 withdrew, and 9 graduated, leaving 37 in attendance; the normal department, in which 184 entered and 64 withdrew, leaving 120 in attendance; the medical department, in which 160 entered, 12 withdrew, and 44 graduated, leaving 104 in attendance; the law department, in which 96 entered, 8 withdrew, and graduated, leaving a class of 53; the theological department, in which 36 students entered and 8 withdrew, leaving 28 in attendance at the end of the year. Each of these departments was provided with an excellent corps of teachers and the work in each was well sustained.

A course of lectures in pedagogy was delivered during the year, to which all advanced students in the university and all teachers of the colored public schools of Washington were invited. It is proposed to

continue this important branch during the coming year, though no provision has been made by Congress for the salary of a professor of pedagogy, and the trustees request that Congress appropriate \$1,500 for that purpose.

The university has expended during the year something over \$3,000 for repairs of building, of which sum \$1,000 was appropriated by Congress. The buildings, it is stated, are old and need constant attention, and an appropriation of \$1,000 for repairs is solicited.

The report also directs attention to the unsatisfactory condition of the University Park lying between the Freedmen's Hospital and the university grounds. This park contains about 11 acres, well wooded with oak trees, and was conveyed to the United States in 1882 by the Howard University to be used as a public park upon the condition that when it should cease to be used as such the title thereto would revert to the university. This donation was accepted by Congress in the act approved June 16, 1882 (22 Stats., 104). Although sixteen years have elapsed since such acceptance, nothing has been done by the Government to grade, drain, fence, or in any way protect it. Its unsanitary condition calls for immediate action on the part of the Government, and adequate appropriation should be made by Congress for its early improvement.

Appended to the report is a detailed statement showing the appropriation of appropriation for the institution made by Congress and the various purposes for which it was expended.

COLUMBIA INSTITUTION FOR THE DEAF AND DUMB.

This institution was established by act of February 16, 1857 (11 Stats., 161). It is managed by a board of directors, on which Congress is represented by one Senator and two Representatives, and is supported mainly by Congressional appropriation, and in part by tuition fees, etc. The admission of all beneficiaries to the institution are subject to the approval of the Secretary of the Interior, and the latter was, up to and including June 30, 1898, charged with the supervision of the expenditure of Congressional appropriations.

It occupies 100 acres of ground, located in the District of Columbia, 2 acres of which were, at the organization of the institution, donated by the Hon. Amos Kendall and the balance purchased by Congressional appropriations. The title of the entire property is vested in the United States, as trustee. There are seven administration buildings, and six dwellings used by the corps of instructors. The estimated cost of all is about \$500,000.

The report of the president, Dr. E. M. Gallaudet, shows that the number of pupils and students in the institution July 1, 1897, was 103; admitted since, 81; total, 184; under instruction July 1, 1898, males 110, females 74; of these 127 were in the college department and 57 in the primary department. The students in the college department repre-

sent 28 States, the District of Columbia, and Canada. Twelve students graduated from the collegiate department at the close of the academic year, 5 from the normal department, and 8 from the primary department. Good health prevailed throughout the institution during the year, all cases of sickness being treated successfully in the hospital rooms of the institution.

Instruction in speech and speech reading was given by experienced teachers to about 80 per cent of the students of the collegiate department and to all of the primary department found capable of making satisfactory progress. A section of one class recited its lessons orally every day.

A bust of the Abbe de l'Epée, founder of deaf-mute education in France, was presented by the educated deaf-mutes of that country.

Medals and diplomas have been received from the Columbian Commission, attesting the high grade of merit attaching to the work of all the departments of the institution.

The report directs attention to the fact that the subject of deaf-mute education received special consideration at the convention of the National Educational Association, which was held in Washington in July, 1898.

The receipts of the institution from all sources for current expenses amounted to \$70,345.94, and the expenditures \$70,049.36. There was also received and expended for special repairs \$3,000.

The estimates for the fiscal year ending June 30, 1900, for the support of the institution, including salaries and incidental expenses for books and illustrative apparatus, and for general repairs and improvements, are \$67,000, and \$3,000 for repairs to the buildings, including plumbing and steam-heating apparatus, and for repairs to pavements.

In a former report of the Secretary of the Interior attention was directed to the fact that differences of opinion existed between the Department and the officers of this institution regarding the expenditure of the appropriations made by Congress therefor, and the recommendation made that the Secretary of the Interior be relieved of the responsibility imposed upon him by law of supervising the expenditures of the Columbia Institution for the Deaf and Dumb. This recommendation was carried into effect by Congress at its last session by including in the sundry civil appropriation bill, approved July 1, 1898, under the head of "Current expenses of the Columbia Institution for the Deaf and Dumb," the following clause, to wit:

Provided, That directors appointed under the provisions of section forty-eight hundred and sixty-three of the Revised Statutes of the United States shall remain in office until the appointment and acceptance of office of their successors; and the directors of the institution shall have control of the disbursements of all moneys appropriated by Congress for the benefit of said institution, accounts for which shall be settled and adjusted at the Treasury Department, as required by the provisions of section two hundred and thirty-six of the Revised Statutes.

MARYLAND SCHOOL FOR THE BLIND.

Under section 2 of the act of Congress approved May 29, 1858 (11 Stats., 294), the Secretary of the Interior is authorized to place for instruction in an institution for the blind, in the State of Maryland or some other State, the indigent blind children of teachable age who are children of persons actually engaged in the military and naval service of the United States, and under section 4869 of the Revised Statutes the indigent blind children of teachable age belonging to the District of Columbia.

The report of the superintendent of the institution shows that in pursuance of this authority there were at the close of the last fiscal year (1897) 22 blind children under instruction in the Maryland School for the Blind at Baltimore, Md.; 4 were admitted and 7 discharged during the year, leaving 17 beneficiaries at the institution on the 30th of June, 1898.

Of those discharged during the past year some had completed the full course, while others withdrew on account of ill health. The regular course of instruction commences in the kindergarten and embraces the high-school grade in English. The course in music is very thorough, commencing with the rudiments, and embracing vocal and instrumental music, music in history, harmony, counterpoint, terminology, and music form. In handicraft instruction is included piano tuning, mattress and broom making, chair caning, sewing (plain and machine).

Special attention is paid to the physical development of the children, for which the school is provided with a well-equipped gymnasium. The school is nonsectarian in character.

A recent inspection of the school, made under the supervision of the Commissioner of Education, shows that the school has all the necessary facilities for the education of the blind; that the United States beneficiaries there are of average intelligence and are making satisfactory progress in their studies.

The cost to the Government for each pupil is \$300 per annum, that being the amount charged by the State of Maryland for similar instruction to others; \$5,900 was expended for the tuition and care of these pupils during the past year; payment therefor is made from any money in the Treasury not otherwise appropriated.

WASHINGTON HOSPITAL FOR FOUNDLINGS.

This institution is under the care of a corporation created by the act of April 22, 1870, to carry into effect that provision in the last will and testament of Joshua Pierce devising to certain trustees 14 parcels of land in the city of Washington, D. C., to be held as a site for a hospital for the reception and care of destitute and friendless children. It is managed by a board of directors, who are required to report annually to the Secretary of the Interior, and is supported in part by

contributions from benevolent persons and societies and in part by appropriations by Congress.

The report of the board of directors shows that 90 children were provided for during the year, of whom 46 were remaining in the hospital June 30, 1897.

The adoptions during the year were 13 and the number of deaths 29; of the latter 18 were under 6 months of age, and but 4 had passed the twelfth month, leaving 44 children in the institution on the 30th of June, 1898.

The total receipts from all sources during the year, including the balance of \$757.66 on hand June 30, 1897, were \$11,485.88, and the expenditures \$7,449.48, leaving a cash balance on hand June 30, 1898, of \$4,036.40.

The board of directors state that not since the hospital was opened in 1887 has the average number of children been as large as during the past year, and urge, in order that they may be enabled to properly carry on the work of beneficence, that the appropriation of \$6,000 may be continued for 1899-1900.

THE ARCHITECT OF THE CAPITOL.

By act of September 30, 1850 (9 Stat., 538), the appointment by the President of an architect to execute the plan for the extension of the Capitol was authorized. The supervision of the Capitol extension and the erection of the new Dome was by act of April 16, 1862 (12 Stat., 617), transferred from the War Department to the Department of the Interior, and all appropriations therefor required to be expended under the direction and supervision of the Secretary of the Interior. By the act of March 30, 1867 (15 Stat., 13), all repairs and alterations of the Capitol were required to be made under the direction and supervision of the architect of the Capitol extension. By the act of March 8, 1879 (20 Stat., 391), the disbursement of all moneys appropriated for the United States Capitol and grounds was placed under the supervision of the Secretary of the Interior, and the disbursing clerk of the Department of the Interior was specifically required to disburse such moneys.

The architect, Mr. Edward Clark, reports that extensive improvements have been made on buildings and grounds during the fiscal year. The work of scraping and painting the exterior surface of the Dome and walls of the old portion of the Capitol was started and continued until interrupted by the winter season. The east and west fronts of the old building were painted, the former as far as the central portico and the latter as far as the return walls. In the interior of the Capitol a number of committee rooms have been remodeled, the heating facilities rearranged, the plumbing changed, the walls and floors repaired and ceilings repaired and frescoed. The heating, lighting, ventilating, and

elevator machinery throughout the entire building has been overhauled and put in order. A number of committee rooms in the House wing have been provided with increased water supply, and in several of the rooms in the old building new and more modern fireplaces have been fixed in place. New doors have been provided for the entrance to the Senate Chamber and the Secretary's office of the Senate. General repairs have been made to committee rooms throughout the building.

During the year statues of Thomas H. Benton, Frank P. Blair, and John E. Kenna were received and placed in Statuary Hall. A bust of John Tyler has been received and placed in one of the niches in the east vestibule leading to the Senate Chamber. The statues in the Capitol have been cleaned and several of the paintings and portraits in oil have been restored. A new elevator has been placed in the western elevator shaft of the Senate wing which has given satisfaction, the elevator at the south end of the east corridor has been repaired, a new steam boiler placed in the House boiler room, and repairs made to the steam heating and machinery of the Senate.

The work on the Capitol grounds has been such as would improve the grounds by restoring those portions where shrubbery has been removed. The walks and trees have been kept in good condition, and repairs made to artificial stone pavements and walls. The roadways in the eastern portion of the grounds have been paved with asphalt. The Architect states the \$12,000 appropriated for the care and maintenance of the Capitol grounds is not sufficient for keeping these grounds in a condition befitting their natural beauty and character. The vast expanse of lawn, the area of the walks and roads, demands more care than can be provided out of the sum appropriated.

The lighting by electricity of the Capitol and grounds has been done with satisfactory results. The service has been extended to various committee and other rooms, and the efficiency of the plant has been greatly increased by connecting the sections in the House and Senate dynamo rooms, so that in case of a large required output the entire machinery may operate as a unit.

The Senate and House stables and Senate engine house have received needed repairs.

At the court-house (City Hall) sundry repairs have been made. The condition of the roof is unsatisfactory and should be replaced by a new one with proper down spouting. The Architect states that the sum appropriated for annual repairs to the court-house is inadequate and at least \$3,000 should be appropriated for repairs to the building the coming year.

At the United States Botanical Garden the propagating houses have been repaired and painted, the heating apparatus overhauled and put in good condition, and a new hot-water tank placed in one of the houses.

The expenditures for the fiscal year have been as follows: Annual repairs on the Capitol, \$30,000; improvement, Capitol grounds, \$12,000;

lighting Capitol grounds, etc., \$31,591.08; elevator, Senate, \$6,500; special repairs, House, \$8,500; steam-heating machinery, Senate, \$3,165; ventilation, Senate, \$3,509.47; additional cases, law library, \$400; flags for Capitol, \$97.75; pavement, Capitol grounds, \$10,658.82; engine house, Senate and House stables, \$500; aggregating \$106,922.12.

On the afternoon of Sunday, November 6, 1898, an explosion and fire occurred in the subbasement portion of the north wing of the central building United States Capitol, causing considerable damage to the brick arches and floors in several of the corridors and rooms, and fire and water damage to rooms connected with the Supreme Court and its offices.

Restoration is now in progress, but in order that the work may be carried forward without delay the Architect states that an appropriation of \$25,000 should be made by Congress.

COLUMBIA RAILWAY COMPANY OF WASHINGTON, D. C.

The president reports, in pursuance of the requirements of section 16 of the act of May 24, 1870 (16 Stats., 132), that the capital stock of the company is \$400,000; that the par value of the shares is \$50, and the number of shares subscribed for up to the 31st day of December, 1897, is 8,000.

The receipts from all sources during the year ended December 31, 1897, including \$6,039.24, balance on hand January 1, 1897, were \$174,760.27. The total disbursements during the year were \$171,866.58, leaving a cash balance on hand January 1, 1898, of \$2,893.69. The total amount of the funded debt, \$500,000; no floating debt; average rate of interest per annum on funded debt, 6 per cent. The amount of dividends declared was 6 per cent on the capital stock. The length of road in miles of single track is 5.6, the length of double track 2.8; total number of passengers carried during the year, 5,484,951; average time consumed by cars over road, twenty minutes; number of persons injured in life and limb, 10, six of these being passengers, 1 an employee, and 3 bicyclists.

DEPARTMENT EXHIBIT AT THE TRANS-MISSISSIPPI AND INTERNATIONAL EXPOSITION, OMAHA.

The preliminary report of Prof. Frank W. Clarke, of the Geological Survey, Department representative on the board of management of the Government exhibit, shows that of the total appropriation of \$200,000 provided in the sundry civil act approved June 4, 1897, to carry into effect "An act to authorize and encourage the holding of a Trans-Mississippi and International Exposition at the city of Omaha, in the State of Nebraska, in the year 1898," approved June 10, 1896 (29 Stats., 382), the sum of \$62,500 was set aside for the construction

of buildings and \$137,500 for exhibits. Of the latter amount, the Department of the Interior was allotted \$16,500. This sum, however, has proved to be more than sufficient for the purpose for which set aside, and an unexpended balance of about \$2,000 will be returned to the board of management.

The exposition opened June 1, 1898, and closed October 31, 1898. The Department of the Interior was assigned about 4,100 square feet of floor space for the accommodation of its exhibit, abutting the grand rotunda of the Government building and having aisles on three sides. This exhibit consisted of contributions from the General Land Office, the Patent Office, the Office of Indian Affairs, the Bureau of Education, and the United States Geological Survey.

The exhibit of the General Land Office consisted of a number of maps, on a large scale, showing the United States and Territories, together with a township plat and a form of patent issued for Government lands. These were built in the sides of a large mahogany case, and were of considerable interest to many.

The Patent Office display consisted chiefly of models taken from the Patent Office, supplemented by several novelties gathered from various sources, among them a linotype machine in full operation; a collection of primitive or savage agricultural implements, showing the evolution of the modern plow; a case of products to illustrate the coal-tar colors; some automatic musical instruments, and a remarkable exhibit of photographs in natural colors by the new Joly-McDonough process.

The Bureau of Education exhibited educational statistics, literature, and photographs illustrating progress in agricultural colleges and pedagogical apparatus. The chief feature of the display, however, was material gathered from the schools in Alaska and specimens showing the work performed by the Bureau in the introduction of reindeer into that district. A fine group of reindeer, driven by a native in a sledge, one of the most striking features of the exhibit, attracted much attention, as also did the general collection of Alaskan weapons, costumes, carvings, utensils, etc.

The Indian Bureau had an admirable exhibit of work executed by pupils in the Indian schools, to which was added some fine aboriginal material and two life-size figures of Indians, a man and a woman in native costume.

The Congress of Indians, under the immediate charge of Capt. William A. Mercer, U. S. A., was one of the leading features of the Exposition.

The exhibit of the United States Geological Survey consisted of a display of minerals, rocks, fossils, maps, geological models, transparencies, and relief maps of the Yellowstone Park and of the State of Nebraska. The entire exhibit was so arranged as to produce a harmonious general effect, and it has been pronounced the most effective display which the Department has shown at any exposition.

THE MARITIME CANAL COMPANY OF NICARAGUA.

Section 6 of the act of Congress approved February 20, 1889, entitled "An act to incorporate the Maritime Canal Company of Nicaragua," provides that said company shall make a report of its operations on the first Monday of December, in each year, to the Secretary of the Interior.

The report of this corporation, I am advised, is in preparation and will be transmitted to the Department within the time prescribed by law. Upon receipt thereof, it will be duly forwarded to Congress.

All of which is most respectfully submitted.

CORNELIUS N. BLISS, *Secretary.*

The PRESIDENT.

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PAPERS

ACCOMPANYING

THE REPORT OF SECRETARY OF THE INTERIOR

REPORT OF THE COMMISSIONER OF PENSIONS.

DEPARTMENT OF THE INTERIOR,

BUREAU OF PENSIONS,

Washington, D. C., August 31, 1898.

SIR: I have the honor to submit the following report of the operations of the Bureau of Pensions for the fiscal year ended June 30, 1898:

TABLE No. 1

shows the number of pensions allowed, the number increased, the restorations, the dropped, the annual value of each class, the total number of pensioners, and the total annual value of the rolls.

There were added to the rolls during the year 52,648 new pensioners, and there were restored to the rolls 4,089 that had been previously dropped, making a total of 56,737. To this number must be added 6,852 originals and 762 restorations (that were held in the Bureau and not entered on the agency rolls until after July 1, 1897), making 7,614, or 64,351 to be added to the 976,014 on the rolls June 30, 1897, making a total of 1,040,365.

During the same period the losses to the roll were as follows:

By death	33,691
By remarriage	1,369
By expiration of minority period.....	2,124
Failure to claim.....	3,031
Other causes.....	6,436
Total losses.....	46,651

leaving the number on the rolls June 30, 1898, 993,714, showing a net gain over June 30, 1897, of 17,700.

Death losses by classes.

	Survivors.	Widows.	Nurses.
Wars prior to 1861.....	1,120	1,008	.....
Wars since March 4, 1861	21,811	9,727	27
Total.....	22,931	10,733	27

At the close of the year, June 30, 1898, the annual value of the roll was \$130,968,465. June 30, 1897, the annual value of the roll was \$129,795,428, showing an increase of \$1,173,037; so that the roll is not only increasing in numbers, but in values. It is believed that the roll

will increase from the war of the rebellion, as there are probably 200,000 ex-Union soldiers living who have never had pension. The roll will increase in amount naturally by reason of increased disabilities as provided by law.

Your attention is invited to the several statistical tables submitted herewith, and each has been given relatively the same number as the corresponding table had in the annual report submitted to you last year—this, in order that the same may be readily compared.

The total number of pensioners classified and compared for the years 1898 and 1897 are as follows:

	1898.	1897.
Widows, Revolutionary soldiers	5	7
Daughters, Revolutionary soldiers	7	9
Survivors of war of 1812	3	7
Widows, war of 1812.....	2,407	2,810
Survivors, Indian wars, 1832-1842	2,019	2,373
Widows, Indian wars, 1832-1842.....	4,067	4,288
Survivors, Mexican war	10,012	10,922
Widows, Mexican war.....	8,143	8,072
Under general laws:		
Army invalids.....	327,080	336,299
Widows, army.....	92,545	94,602
Navy invalids	4,833	4,788
Widows, navy.....	2,300	2,375
Act of June 27, 1890: .		
Army invalids.....	399,366	378,609
Army widows	119,785	110,593
Navy invalids	14,543	13,831
Navy widows.....	5,944	5,766
Army nurses	655	663
Total	993,714	976,014

It will be found on further examination that they were divided on the rolls June 30, 1898, as follows:

	Survivors.	Widows.
On account of old wars.....	12,034	14,629
On account of general laws.....	331,913	95,500
Act of June 27, 1890	413,909	125,729
Total	757,856	235,858

It will be observed by reference to Table No. 1 that there were 26,760 certificates of straight increase issued during the year.

The amounts paid out at the several agencies for the year on account of those pensioned under all other laws were \$78,396,209.13, and on account of those pensioned under the act of June 27, 1890, \$66,255,670.67.

TABLE NO. 2

shows the number of pensioners dropped from the rolls for various causes, and compared with the previous year. They were as follows:

Year.	By death.	Remar- riage.	Minors.	Failure to claim.	Other causes.
1898	33,691	1,369	2,124	3,031	6,436
1897	31,960	1,074	1,845	2,683	3,560

Those represented in the death column include, of course, widows as well as invalids.

"Failure to claim" covers those that for some cause have permitted their pensions to remain three years without drawing, when, pursuant to law, they were dropped. The cause may have been "death" or "remarriage," but information of the fact failed to reach the disbursing agent.

"Other causes." This covers those dropped by force of law, and those that get pensions granted for some period in the past and who have no permanent pensionable status. For instance, widows and minors, whose title to pension terminated prior to the issue of their certificates, get but one payment, go on the rolls as original pensioners for the one payment, and then are dropped.

The droppings for the fiscal year just closed are increased somewhat by a partial checking up of the rolls of the Philadelphia and Boston agencies, whereby a considerable number of deaths, remarriages, etc., were found and the pensioners dropped where, in the regular course of business, they would not have been dropped during the past year.

TABLE NO. 3

shows the appropriations and disbursements for the year.

The disbursements were for pensions on account of Army and Navy, \$144,651,879.80, to which add cost of disbursements and fees of examining surgeons, \$1,207,515.51, and salaries and per diem expenses of the Bureau, \$2,683,212.54, and we have a gross expenditure of \$148,542,607.85. In addition to this there was paid a balance due on account of medical examiners for the last quarter of 1897, \$223,363.41, or a gross expenditure during the year of \$148,765,971.26.

TABLE NO. 4

shows the amount disbursed at each of the several agencies.

TABLE NO. 5

is statement of amount paid for pensions under the general law at each of the several agencies.

TABLE NO. 6

is statement of the amount paid for pensions under the act of June 27, 1890, at the several agencies.

TABLE NO. 7

is statement showing amounts paid for pensions to the survivors and widows of the war of 1812 since 1871; of the war with Mexico since 1887, and of the Indian wars since 1893.

TABLE NO. 8

shows the number and amount paid as first payments in each class of certificates issued during the fiscal year of 1898. It also shows that there remained in the hands of the pension agents unpaid at the end of the year, 5,081 cases of all classes, under which there was due as

first payments the sum of \$760,212.24. The average value of all original payments during the year was \$206.36. The average value of all original payments in the general-law cases was \$406.97. The average value of all original payments under the act of June 27, 1890, was \$177.54. This table also shows that the amount withheld from pensioners and paid as fees to attorneys during the year was \$730,019.36.

TABLE No. 9

is a classified statement of the number of pensioners on the rolls at each agency, showing the increase and decrease of each class for the year, with a net increase of 17,700 for the year.

TABLE No. 10

is a statement showing the disbursements for pensions, fees of examining surgeons, cost of disbursement, salaries, and other expenses of the Bureau for each fiscal year since July 1, 1865.

TABLE No. 11

shows the original pension claims filed and allowed each year since July, 1861.

TABLE No. 12

shows the number of pensioners in each State and Territory and in foreign countries, with the amount paid opposite.

The number of pensioners in foreign countries at the close of the fiscal year was 4,371, having increased 309 during the year.

The total amount paid to pensioners living abroad, during the year was \$669,862.56. In 1897 it was \$619,945.88.

It will be observed that the average amount paid to each pensioner for the year, living abroad, was \$153.25, while the average annual value of all pensions on the rolls June 30, 1898, was \$131.79.

There is a lack of system in the established practice of this Bureau in securing the necessary original and continued identification of the pensioner with the service, as also in securing notices of deaths, remarriages, and necessary information for droppings from other causes, of those living in foreign countries. This Bureau has no supervision or criminal jurisdiction over pensioners living in foreign countries.

TABLE No. 13

is a statement showing, by classes, the different monthly rates paid to pensioners, and the number at each rate on the rolls June 30, 1898, also under the act of June 27, 1890, with explanation covering those cases appearing under the latter, who are drawing in excess of \$12 per month, that being the maximum allowed under said act of June 27, 1890; also same for war of 1812, war with Mexico, and Indian wars.

There were 17 survivors and 211 widows of the Indian wars, and 46 survivors and 502 widows of the Mexican war pensioned during the year.

TABLE No. 14

shows the names and residence addresses of the surviving widows (5) and daughters (7) of the American revolution. The annual report of

1897 showed 7 widows and 9 daughters. In the past year 2 widows and 2 daughters have died.

TABLE No. 15

shows the names and residence addresses of the survivors of the war of 1812. At the close of the year 1897 the same table showed 7 survivors. During the past year 4 of these have died. There are now 2,407 widows of the war of 1812, when in 1897 there were 2,810. One survivor (dead; payable to his widow) and 7 widows of the war of 1812 were pensioned during the year just closed.

TABLE No. 16

is a report of pension certificates issued during the year, in all 98,574. There were 3,741 army and navy invalids and 4,335 army and navy widows pensioned under the general laws, a total of 8,076. There were 28,776 army and navy invalids, and 14,971 Army and Navy widows pensioned under the act of June 27, 1890, making a total of 43,747; and there were 825 pensioned under other laws, for Indian wars, Mexican war, and the war of 1812, making a total of 52,648 new or original pensions.

There were 1,833 under the general law, and 2,246 under the act of June 27, 1890, making a total of 4,089, restored to the rolls who had been previously dropped. There were 26,760 straight increases, 11,077 reissues, accrued and other issues.

TABLE No. 17

shows in detail the operations of the mail division of this Bureau.

I desire to call your attention to the growth of the work in this division, it being an index of the growth of the work of the Bureau. For the fiscal year 1896 there were 2,162,581 pieces of mail handled, received, and sent. For the year 1897 there were 5,056,768; and for the year 1898 there were 6,566,967, or 30 per cent increase during the past year over the preceding year, and more than 300 per cent over the year 1896.

The Congressional calls and letters of inquiry have increased from 799,000 in 1896 to 841,000 in 1897, and 1,234,000 in 1898, showing an increase of about 50 per cent for the last year over the preceding year.

There were sent out 2,054,048 letters (not including cards) during the past year, as against 1,542,101 the preceding year, an increase of about 33½ per cent.

TABLE No. 18

shows, very briefly, the work of the army and navy survivors' division.

In this division are kept, so far as it is practicable to secure them, the names of all of the survivors of the war of the rebellion, their service, and their present post-office addresses, on the card system.

TABLE No. 19

is a report itemizing the number of claims of all classes pending on June 30, 1898. There were 635,059 claims pending. On June 30, 1897, there were 578,099. The largest number pending was January 15 last, when there were 651,668. Since that date 16,500 more claims were

allowed than were filed. Of the pending claims, 200,000 or thereabouts are called original claims, while the remainder, 435,000, are claims for increase, rerating, etc.

It is hardly fair to say that there are 200,000 original claims pending, awaiting adjudication. I am confident that there are not over 75,000 of these (invalids and widows) that are genuine original claims, as an original claim should be understood. The other 125,000 are claims (invalids and widows) where the claimants are already pensioned under the act of June 27, 1890, and have claims pending under the general law to establish claim for disability as being of service origin.

When the disability act of June 27, 1890, passed it provided a minimum pension of \$6 per month and a maximum pension of \$12 per month. There were at that date about 100,000 pensioners on the rolls drawing less than \$6 per month. Many of these were transferred to the new law and received the benefits of this law, and the law did not deprive them of the privilege of continuing the claim under the general law. When the pensioner's established disability increased, or an additional disability of service origin was proven, until the ratable disability was established in excess of the maximum rate under the act of June 27, 1890, then the pensioner could be transferred back to the list of pensioners under the general law. Many claimants had claims pending that first accepted the benefits of the act of 1890, in the meantime continuing the prosecution of their respective claims under the general law.

A claim filed and rejected, under the established practice, is still pending. In other words, many of the pending claims have been rejected from one to ten times or more, though still being on the records as pending. Many of these claims have been rejected by several Commissioners, have been carried on appeal from time to time to the Honorable Secretary of the Interior, and the Secretary sustained the action of the Commissioner; and yet the claim continued, under the practice, as pending.

I make this explanation to show that it is not fair to say that there are 200,000 original claims pending, although the records indicate this. Many are duplicated. One claimant already pensioned may have another original claim pending under another law; but no one can draw, under the law, two pensions for different services.

TABLES NOS. 20 AND 21

relate to the report of the chief of the special examination division, and cover, from a comparative standpoint, Tables 19 and 21 of the fiscal year of 1897.

It is believed that the division has rendered good service to the claimants as well as to the Government.

There were 15,000 claims referred to this division during the year and sent to the examiners in the field for careful examination. Many of these were claims long pending—the claimants and their comrades long separated—but through the aid of the army and navy survivors' division in locating comrade-witnesses, the claims have been sent out to the examiners in the field, when these witnesses lived often in remote sections, and evidence found to complete the claims. The service has in this way endeavored to do justice to all claimants, and many just claims have been admitted that would otherwise have been rejected.

This report gives a careful résumé of the work of that division.

TABLE No. 22

is report of the law division.
It affords me pleasure to call your attention to the report of the chief of this important division. It is as brief as it could be made, covering so well the volume of business transacted in the division.
I furnish for your information and consideration the following additional tables, exhibits, and reports for the year:

TABLE No. 23.

As per your request, I submit a report showing the number of special acts of Congress granting pensions, beginning with the Thirty-seventh Congress (1861-1863) and ending with the Fifty-fourth Congress (1895-1897), showing the number of special acts of each Congress, the number each Congress pensioned, and the rate of each pension so granted, the total number pensioned being 6,097.
No convenient records having been kept of the details of each case, I can only furnish the number, instead of the name and service of the pensioner.

TABLE No. 24

is an itemized list of special acts passed by the second session of the Fifty-fifth Congress, showing the passage of 394 bills. The name of each beneficiary is given, the service, the rate by special act, and the former rate, when pensioned. I follow this table with a recapitulation, giving number granted at each rate. You will note that one act was the repealing of a former act whereby a special act had been secured through fraud. Two were inoperative for the reason that the intended beneficiaries were already receiving the same rates, and two were dead. So that there were, net, 389 instead of 394 names added to the rolls.

TABLE No. 25

shows claims filed during the year.
There were original applications for pension filed as follows:

Invalids:	
Army, under general law.....	5, 722
Navy, under general law.....	802
Army, under act June 27, 1890.....	18, 612
Navy, under act June 27, 1890.....	2, 719
	<hr/> 27, 855
Widows:	
Army, under general law.....	9, 947
Navy, under general law.....	340
Army, under act June 27, 1890.....	17, 026
Navy, under act June 27, 1890.....	805
	<hr/> 28, 118
Total original claims filed.....	<hr/> 55, 973

Table No. 11 shows only 37,524 original applications filed, hence an explanation is necessary, there being a difference of 17,449 claims. This shows that there have been this number of duplicate original claims filed, the claimants filing under the act of June 27, 1890, for disabilities incurred since the war or military service, and also a claim under the general law for a disability or disabilities of service origin. The record division shows all original claims filed, while Table 11

shows the number of claimants. Much time of the Bureau is thus spent in the adjudication of two claims for one claimant. This explanation will account for the seeming discrepancy between the two reports.

In addition to the original claims filed, there were 56,354 applications for increase under the general law, and 53,125 under the act of June 27, 1890, making a total of 109,479 claims for increase (this includes 3,622 Navy claims), making a total of 165,442 claims (original and increase) filed during the year. The report of the chief of the record division, Table No. 25, shows that there were 41,543 duplicate claims filed under the act of June 27, 1890, and 3,610 duplicates filed under the general law during the year, making a total of 45,153.

TABLE No. 26

is report of the medical referee, to which your attention is requested.

An appropriation of \$700,000 was made to pay fees for medical examiners throughout the country for the fiscal year ended June 30, 1898. This amount was found to be insufficient, and an additional appropriation of \$250,000 was asked for and made by Congress.

There are now in the service 4,663 medical examiners (see Exhibit A, 26), viz, 202 boards, 3 surgeons each, within the classified service, 606; 1,216 boards, 3 surgeons each, not within the classified service, 3,648; single surgeons and specialists, 409.

There is much complaint among pensioners, and very just cause for such, by reason of the lack of uniformity of ratings for the same or like disabilities in cases of different claimants. This complaint has always existed and always will with our present system and established practice, and it can not be remedied without radical change of system.

The medical examinations form the basis, the very foundation, of our whole system, as all pensions to soldiers (under the act of July 14, 1862, and the act of March 3, 1873—the general laws) are based upon disabilities incurred in the service, while those pensioned under the act of June 27, 1890, must show, by medical examination, that their disabilities (not of service origin) are such that they are incapacitated from making a living by manual labor; and, further, having once established a ratable disability, future increases depend upon medical examinations.

The practice requires that medical examiners shall make a diagnosis and complete and accurate pen-picture of the disability or disabilities of the claimant; and although the medical examiners may be learned in medicine and skilled in surgery, they have had no special training for this particular service, no training in the pension laws, schedules, ratings, and established practice of the Bureau; and very many of them (the compensation being so small) can not afford to neglect their practice to familiarize themselves with the laws and rules governing the actions of the Bureau. They are paid a small fee for each examination and detailed report, and such examination is very often, no doubt, hurried and superficial. Therefore, many test examinations are made.

As an illustration: This Bureau recently found it necessary to cause a test examination to be made of a pensioner. He was sent before four medical boards, three members each, all present. All of these boards were within the classified service. Each examined the pensioner under the same instructions. Each board made a careful examination and reported the results of their investigations with the usual care, describing the pensioner's disabilities from their standpoint. Each board found unanimously; no minority report. The results, summed up briefly,

were: One board could find no ratable disability; another found a ratable disability and estimated it at \$8 per month; another board found disability, carefully described it, and rated it at \$17 per month, while the other board made equally as careful examination and estimated the claimant's disabilities as third grade—\$24 per month. Same man, same conditions, same instructions, and all within forty-eight hours. These physicians are each and all, I am informed, skilled in their practice—in every way reputable practitioners.

This one illustration is submitted for your consideration as evidence that the very general complaint against the uniformity in the medical examiners' description of the disabilities, and in their ratings, is beyond the control of this Bureau, under the present laws and established practice. When a claimant is examined before a medical board and no ratable disability is found he becomes dissatisfied with the action of the Bureau. The rejection of the claim by this Bureau naturally causes him to complain, and thereupon he asks that the claim be reopened, and that he be ordered for another examination before another board, and continues until some board estimates and describes his disabilities to meet his expectations.

It is beyond the power of this Bureau, under the long established and existing system, to cause uniform ratings for like disabilities, though the very greatest care is exercised by the Bureau and skilled men employed to examine papers as reported by the 4,600 physicians employed throughout the country.

TABLE No. 27

is a report of the chief of the board of review.

Your attention is respectfully invited to the statistics therein given so briefly and concisely, this being the legal branch of the service in the adjudication of all claims, and therefore very important.

As will be seen, this division handled during the year 232,065 claims. Of this number 51,676 that had been forwarded from adjudicating divisions were examined, and finding that they were incomplete were returned to the several adjudicating divisions for calls to be made for additional evidence. There were 95,760 claims allowed, while there were 85,629 rejected. This includes rejections of claims for higher rates, making a total of 181,389 claims adjudicated by the board of review during the year, an average of over 600 per day for each working day.

There were 12,057 notices of appeal taken by the claimants (none by the Government) from the decisions of former Commissioners and those of the present Commissioner. It will be seen that the Bureau reexamined, reconsidered, and readjudicated 67 of these on legal grounds, and 433 on medical grounds, making a total of 500 cases. The remaining 11,557 on reexamination, could not be reconsidered by this Bureau, and were therefore carried to the Honorable Secretary of the Interior on appeal.

It affords me pleasure to say that you sustained the action of this Bureau in 3,326 cases acted upon, and only reversed the action of this Bureau in 396 cases, and in these reversals no precedents are set to change the established practice of the Bureau. Each case, according to your instructions, must be considered on its individual merits, and in accordance with the established practice.

The number of cases remaining in your hands on appeal at the close of the year being 7,835, the report of the board of review shows the accuracy of the work performed.

Of the total number of claims adjudicated, about 15,000 were of that class that go to the special examination division and then to the field for examination and further evidence. The remainder, 166,000 and over, were acted upon without special examination. The 85,629 cases rejected go to the pending files for future consideration.

TABLE No. 28

is a statement showing the value of the pension roll on June 30 of each year and amount paid the following fiscal year. (See footnotes in table, to which your attention is invited.)

TABLE No. 29

shows number of employees and amounts appropriated for salaries for special examiners from July 1, 1864.

TABLE No. 30

is the annual report of the chief clerk of the Bureau, containing much valuable and statistical information.

PENSION AGENCIES.

There are eighteen pension agencies. (See Table No. 4.)
For the year 1898 Congress saw fit to reduce the appropriation for clerk hire in the several agencies from \$450,000 to \$430,000, again to be reduced in 1899 to \$415,000, or a fraction more than 40 cents per annum each for clerk hire, to pay each pensioner four times per year and keep all necessary records.
An effort has been made to get the agencies located in public buildings so far as practicable. Also, reasonable reductions have been secured in rents for such agencies as are located in other than public buildings. The following table shows the rates of rents for pension agencies during the fiscal year:

Name of agency.	1896.	1897.	1898.
Buffalo.....		2,928	1,500
Detroit.....	2,400	2,400	2,400
Indianapolis.....	2,500	2,500	1,500
Milwaukee.....	2,500	2,500	1,500
New York.....	10,000	10,000	5,000
San Francisco.....	1,872	1,872	1,300
Topeka.....	2,250	2,250	1,500
Washington.....	1,380	1,380	1,380
Total.....	22,902	25,830	16,680

The agencies at Augusta, Boston, Chicago, Concord, Des Moines, Knoxville, Louisville, Columbus, Philadelphia, and Pittsburg are all located in public buildings. It is expected that within a few months the agency at Detroit will be provided with quarters in a public building. Leases for the year 1899 have been entered into at same rates as those paid in 1898, with the exception of Detroit, that being temporary occupancy and per month.
The work of the agencies is in the hands of exceedingly competent officials, is well systematized, and payments are made very promptly.
I have recently instructed the several pension agencies to call upon

pensioners living in cities having free delivery to furnish their residence addresses (street and number), in order to facilitate the delivery of their pension agency mail and meet the requirements of sections 370-376 of the Postal Rules and Regulations.

The attention of this Bureau was called to the fact that notaries public, magistrates, and others engaged in the business of taking acknowledgments of pensioners' quarterly vouchers for payment, were not always complying with the requirements of the law. The special examination division was directed to cooperate with the agencies, and through the field examiners make a tour of observation in the three groups paid by the agencies during the months of April, May, and June, and report to this Bureau the result of their work. Their reports have been received, and are quite voluminous, showing that many officials are, to say the least, careless as to the requirements of the law, by failure to require necessary identification of pensioners, in failure to require presentation of pension certificates by the pensioners at the time of taking such acknowledgments, and, further, in the use of professional or stock witnesses. The law is plain on these points. The object of this tour of observation was to see the practices, and correct irregularities, if any existed. Warning has been given to the officials, calling attention to the specific requirements of the law, and it is to be hoped that all this may be brought within the requirements of the law without applying the penalties as provided for in the act of July 7, 1898.

ACT OF JUNE 7, 1888.

Your attention is invited to the following extract from the pension laws:

The following provisions were enacted as a portion of the act making appropriations for the payment of invalid and other pensions of the United States for the fiscal year ending June thirty, eighteen hundred and eighty-nine, approved June 7, 1888:

* * * * *

That all pensions which have been, or which may hereafter be, granted under the general laws regulating pensions to widows in consequence of death occurring from a cause which originated in the service since the fourth day of March, eighteen hundred and sixty-one, *shall commence from the date of death of the husband. And provided further,* That all United States officers now authorized to administer oaths are hereby required and directed to administer any and all oaths required to be made by pensioners and their witnesses, in the execution of their vouchers for their pensions free of charge.

In my opinion this law is not consistent in its results with a well regulated system of pensions. (The proviso was reenacted March 1, 1889.) Up to the passage of this act, June 7, 1888, the widow's pension dated from the date of filing the claim, if the application was filed after July 1, 1880. No soldier's pension can go back of the date of its filing since July 1, 1880, under the act of March 3, 1879, known as the "arrearage act."

I know of no better way to bring to your attention the results of the administration of this law than to cite you illustrations of its workings.

It would seem that there were and are a large number of widows who had never been pensioned or filed claims for pension. Many of them at that date (June 7, 1888) had remarried, and before the passage of this law had no pensionable status on account of their remarriage without filing claim for pension. The soldier husband, by reason of wealth, pride, or other cause, had failed to file a claim for pension and

the widow had not claimed pension, though she may have remained a widow for from one to twenty years or more. After remarrying, the successor to the soldier husband, by her claiming pension under the act of June 7, 1888, becomes the beneficiary of this Government's generosity to its defenders, it matters not what may have been his position during the war.

As an illustration of the established practice under the law, I give you the result, viz:

Claim No. —, —, —, captain in Company —, —, Regiment — Volunteer Infantry, was honorably discharged. In 1871 this captain died. He was not a pensioner, and never had filed a claim for pension. His widow remained a widow until March 30, 1887, when she remarried, having filed no claim, and, having remarried, had no pensionable status. In 1893, five years after the act of June 7, 1888, had passed, six years after her remarriage, and twenty-two years after the death of her soldier husband, she files her claim for pension as a widow, from the date of the death of her soldier husband in 1871 to the date of her remarriage in 1887—sixteen years—and gets nearly \$4,000, practically for the use and benefit of the second husband.

Another illustration:

Henry Jordan, Company —, —, Regiment United States Colored Troops, died in April, 1867. His widow remarried in 1874. No claim had ever been filed. The youngest child became 16 years old in 1883. Claim was not filed until 1891, since allowed, carrying about \$2,000.

Many millions of dollars have been paid out on this class of claims. There seems to be no limit to the number. Only recently a claim was allowed that dated back to 1857. Another, recently filed, claims from 1852.

I am of the opinion that the operation of this law is contrary to the spirit or intent of a just and generous recognition of the soldier's service. I am, too, of the opinion that the widow's pension is intended to aid, assist, and comfort the soldier's widow during her widowhood. Again, this law has, with the aid and interpretation of designing persons, gotten the widow into trouble. In a Western State, a colored soldier died in the early 70's, leaving a widow. Soon thereafter the widow remarried. The second husband died a few years ago. The widow was advised to apply for a pension as the widow of her first husband, and pension was secured covering the whole period from the date of the death of her first husband. She is now serving a term in the penitentiary. Only recently the United States district attorney in a New England State caused the arrest of a woman whose soldier husband died in 1869. She remarried in 1870, filed her claim, established it by proof, and had it allowed in 1897, dating back to 1869, covering the period of her widowhood, as also that of her remarriage.

I have only stated these four cases to bring to your attention very briefly but plainly the operations of the law. Many, many could be recited.

MINORS.

Also, under section 4702, as amended by the act of March 3, 1879, minors who have arrived at the age of 30, 40, or more years are being pensioned for the period of their minority. Claims have been filed (and are still being filed), and many have been allowed, where they were not filed until the minor had long since passed the pensionable age of minority. In many cases the minor had married; and there are other cases where such minor had become widowed and even remarried.

The widow may have remarried within a reasonably short time after the death of her soldier husband, having several young children as the soldier's minors, she having claimed no pension. The children may have grown up to mature manhood and womanhood, and, as I have said, may have married, possibly. The widow, at this late date, is privileged to file a claim, and receive pension for herself during her widowhood, and for the minors, included in the widow's pension, until the youngest minor shall have become 16 years of age; or, if the widow has remarried, and has died without receiving any pension, then the minors may claim and receive the pension from the date of the soldier's death. This pension would continue until they reached the age of 16 years, no matter what might be their age at the date of the filing of the claim. This under the present established practice.

The practice has been changed from time to time in the past, Commissioners having held that the minor's pension must be claimed during the period of its minority. This has been sustained by the Secretary of the Interior, then again reversed, and so on, until the practice in the past has been irregular.

Your Commissioner is clearly of the opinion that the minor's pension was intended to aid, assist, and comfort the minor during the period of minority, and that it was not intended that the pension, either for the widow or the minor, was to be hoarded up and drawn in bulk years afterwards.

Section 4702 says the pension shall be paid "to his child or children until they severally attain the age of sixteen years, and no longer." So it is in the amended act of August 7, 1882.

Legislation should be had to the end that no pension should be granted to date prior to the date of filing the claim.

These old claims make it very difficult for this Bureau to deal promptly with the claimants and at the same time protect the interest of the Government and the honor and integrity of the pension roll.

DROPPINGS FROM THE ROLL.

I call your attention to the fact that, in the perfecting of the established practice of the Bureau, there is the lack of a system of registration whereby the agencies can secure prompt notice of deaths, remarriages, etc., of pensioners, hence a large number are found on the abstract each year as dropped (3,031 last year) by reason of failure to claim, the law being that if the pensioner fail to draw his or her pension for three years such pensioner is dropped from the rolls, on the presumption of death. So it is with remarriages and other causes, the pension agencies having no source whereby they can get the necessary data, excepting through calls upon the postmasters, or through volunteer sources. The 250 special examiners of this Bureau that are doing work in the field can render but little assistance, as they can know but a limited number of the pensioners, having no directory or registry for reference.

A well-matured system of county or district registration or annual identification would prevent experts from becoming the successors of the pensioners in drawing the pensions after the original pensioners were dead or remarried.

CIRCULARS—FAMILY HISTORY.

During the past year a circular letter, with questions and blanks for reply, was sent to each invalid pensioner, for the purpose of getting

a statement from the pensioner himself as to his family—whether married or not, and if his wife is living, requesting her maiden name, when married, etc., together with the names of his children, if any, when born, names, etc.; this for the purpose of filing with his papers his own statement while in life, thereby enabling the Bureau to more readily and promptly adjudicate his widow's claim for pension, should such a claim be filed in the future, thus saving the widow much annoyance in securing data necessary to the passage of her claim.

PAYMENTS TO "UNFIT PERSONS."

I take pleasure in calling your attention to recommendation made by the Honorable Commissioner John C. Black, in his annual report for 1887, viz :

I respectfully recommend that the law be so altered and amended as that the Commissioner of Pensions shall be authorized to order the payment of pension to the wife of a pensioner, or to a suitable person in behalf of the children of a pensioner, in cases where the pensioner shows by his habits that he is an unfit person to receive or disburse such pension, or because of his incompetence, not arising, perhaps, to the degree of lunacy, but such as to prove him a spendthrift, or in cases where he is an inebriate, or in cases where his money is spent upon improper persons or in improper ways. The law as at present existing limits the power of the Commissioner very greatly in this particular, and authorizes him to direct payment to the wife or guardian only in cases of insanity, or other mental incapacity, or imprisonment for offenses against the laws. Payment so ordered made to any person other than the pensioner, for the benefit of the wife or children, should of course be made only upon bond, properly executed.

I commend this suggestion to your careful consideration. There are many men—good men—who are incapable of properly taking care of the generous bounty provided for them by the Government. Many instances are brought to the attention of this Bureau. In a report recently made by one of the efficient special examiners of this Bureau, where the pensioner will get, as a first payment, about \$4,500, the examiner sums up the case with the suggestion that the man would be better off with a small pension than a large one; that if he gets much it will be dissipated, and go to those who never served the cause of the Government, and bring trouble upon the pensioner and those dependent upon him.

REMARRIAGES.

The act of June 27, 1890, prohibits the granting of a pension to the widow (under this act) unless she was married prior to the passage of the act.

I took occasion last year to recommend that the laws granting pensions to widows of soldiers should be amended. After another year's experience I am fully convinced that such legislation would be wise in the interest of the soldier pensioners, their good name, and in the interest of good morals.

A TREATISE ON BUREAU PRACTICE,

for the purpose of simplifying and having uniform the practice of the Bureau, and having it harmonious throughout.

A treatise has been prepared by the Bureau, and published by your Department, which, it is confidently hoped, will serve to facilitate to a great extent the settlement of pending claims by placing before examiners, as simply as practicable, the requirements of the Bureau in the

different classes of claims, and thus enabling claimants and those who adjudicate these claims to proceed to their settlement in a more expeditious and intelligent manner.

LAW LIBRARY.

In the proper transaction of the business of the Bureau it is necessary daily to consult the laws of the different States and the decisions of the State courts interpreting such laws, as well as text-books relating to different branches of the law. Especially is this the case in questions relating to marriage, divorce, and guardianship.

The law library is exceedingly incomplete, and wholly inadequate to meet the demands of the service. I would therefore suggest that an appropriation of \$500 be asked for, to be applied to the purchase of law books necessary to be used in the work coming before the Bureau.

MEDICAL LIBRARY.

I have the honor to call your attention to the necessity of a better, more extensive, and a more modern library of standard works on medicine and surgery for the use of the medical division of this Bureau. For the ten years ending June 30, 1897, there were expended about \$125 for standard reference medical publications. Last year you generously allowed from the Department appropriation about the same amount, which was, I assure you, of very great service in securing a few standard publications; but the library is wholly inadequate for the demands of the service and responsibility of the work of the medical examiners of the Bureau. I respectfully suggest that an appropriation of \$300 be secured to purchase standard modern works on medicine and surgery.

REVISION OF THE LAWS.

Since the passage of the general law of July 14, 1862, there have been numerous laws amendatory, special and general, with the many rulings and decisions interpreting the laws, until the whole system is a most complex and wonderful network or labyrinth of laws and legal opinions, to the end that a precedent may be cited for any action of this Bureau.

The importance of the work is such, and the demands upon the revenues of the Government so great, with a prospect of much greater in the near future, that I am of the opinion that, in order to secure reliable, intelligent, and uniform practice in the future, a commission should be appointed on the revision of the laws, rules, and regulations governing the issuance of pensions.

WAR WITH SPAIN.

A separate division is being organized for the adjudication of all claims growing out of the war with Spain; records are being prepared for registration of all these claims; an accurate account will be kept, so that in future actual results may be known, and existing conditions, without unnecessary delay.

It is expected that the date of the President's proclamation declaring war with Spain fixes the date of the beginning.

These soldiers will receive their pensions, under the general laws, for disabilities of a permanent character, contracted while in the service. The act of June 27, 1890, applies only to the war of the rebellion, excepting as to dependent parents.

Only a few claims (less than 100) have been filed up to the close of the fiscal year, and none has been adjudicated.

PENSION BUILDING.

I call your attention to the fact that an accumulation of tons upon tons of valuable papers and records occupy the whole of the fourth or upper story of this building, and these are known as the admitted files. The necessity for the preservation of these papers is apparent to all. Much trouble has been experienced from year to year by reason of a defective roof, and this each year requires more or less repairs.

The first, second, and third stories of the building, with one exception, are used for the offices and adjudicating divisions of this Bureau, and by reason of overcrowding and accumulation of papers more room seems to be an absolute necessity. There is no room or space that I can set apart for the use and occupancy of the new division for the adjudication of the Spanish war claims. The whole of the court is occupied with cases containing pending files. The basement, uninhabitable in its present condition, can not be used for the storage of papers because of its dampness.

I have the honor to recommend (1) that the space now occupied by the Commissioner of Railroads in this building be secured for the use and purposes of this Bureau; (2) that an appropriation of \$5,000 be asked for to run an area from the west entrance of the building southwardly to the southwest corner, thence along the south side of the building to the southeast corner, and thence to the eastern entrance, for the purpose of securing necessary ventilation for the basement, and for the further purpose of turning the surface water from the building, instead of into the basement, where it now finds its way; and (3) an appropriation of \$2,500 is recommended for ordinary and timely repairs of the building.

EMPLOYEES.

Employees authorized by Congress in the appropriation for the maintenance of the Bureau for the fiscal year ended June 30, 1898, covering the several grades and classes, were 1,836. The Fifty-fifth Congress, in the appropriation for the fiscal year of 1899, made a reduction of 110 places in the classified service, adding 10 laborers and 5 female laborers to the force, making a net reduction of 95. The reduction was made June 30, 1898.

Up to the close of the fiscal year there had been reinstated in the service of this Bureau, under Rule 9, Civil Service, 121 ex-Union soldiers, who had formerly served in the Bureau, and 18 in the pension agencies, making 139 restored to the service. There had been made 261 promotions of ex-Union soldiers in the Bureau and 18 in the agencies. Four soldiers' widows were reinstated, 2 soldiers' widows promoted, and 58 orphans and relatives of soldiers reinstated and promoted. The Civil Service Commission has furnished 2 clerks for the Bureau and 7 for the agencies. All others were reinstatements, as set forth. During

the fiscal year the Bureau has furnished by detail to other departments and bureaus, from its authorized force, employees as follows:

Department or bureau.	Number of employees.	Salaries.
Department of the Interior:		
Secretary's Office	33	\$17,163.29
Patent Office	7	4,534.46
Bureau of Education	1	1,200.00
Civil Service Commission	14	9,629.80
Navy Department	1	242.29
Executive Department	5	2,752.44
Congress	2	3,701.04
Total	a 63	39,223.41

a Part time.

During the year the office force was so organized as to devote four days per week (Mondays, Tuesdays, Wednesdays, and Thursdays) to original claims in the adjudicating divisions, and Fridays and Saturdays to increase claims, the widows' sections continuing throughout the week on widows' claims.

It will be observed that 14,881 invalid claimants filed claims for original pension and 21,412 widows filed for original pension, making a total of 36,293 claims of the war of the rebellion, or, rather, claimants, as per Table No. 11. There were 32,517 original invalid pensions and 19,310 widows' original pensions granted, making a total of 51,827 original pensions granted. This would seemingly indicate that 51,827 claimants had been settled with. This is not exactly so, as many of these were pensioned under the act of June 27, 1890, and still have claims awaiting adjudication under the general laws.

It affords me pleasure to say that the working productive force of this Bureau has rendered good, careful, conscientious service during the year; the class of claims we have had to deal with being largely of long standing and most difficult.

Respectfully submitted.

H. CLAY EVANS,
Commissioner.

The SECRETARY OF THE INTERIOR.

Pensions allowed and increased during the year.

Pensions allowed and increased during the year.										
	Original.		Increase, release, and additional.		Restoration and renewal.		Dropped from the rolls.		Number of pensioners June 30, 1898.	Annual value of pensions as shown by the rolls June 30, 1898.
	Number.	Annual value.	Number.	Annual value.	Number.	Annual value.	Number.	Annual value.		
Army, general law	3,502	\$402,730	12,300	\$861,000	1,729	\$237,621	15,226	\$2,573,194	327,080	\$54,183,763
	37	5,439	1	.....	1	.....	46	6,946	655	97,244
	4,250	603,500	100	12,900	62	8,184	7,060	1,136,660	92,557	14,177,092
Navy, general law	239	38,240	192	16,128	42	6,300	236	46,964	4,833	855,657
	89	17,266	5	735	.....	.....	164	30,996	2,300	449,628
Army, act June 27, 1890	27,754	2,442,352	13,185	751,545	2,036	195,456	12,712	1,512,728	399,366	44,059,368
	14,565	1,471,065	164	6,560	123	14,145	7,968	868,512	119,785	12,125,324
Navy, act June 27, 1890	1,022	91,980	526	24,196	84	7,728	394	44,128	14,543	1,550,505
	406	42,224	2	144	3	432	231	27,258	5,944	605,784
War of 1812	1	96	.....	.....	.....	.....	5	985	3	288
	7	1,008	1	48	.....	.....	410	59,040	2,407	336,300
War with Mexico	46	4,508	273	19,383	8	896	964	114,716	10,012	1,158,684
	502	48,192	5	405	1	96	432	41,904	8,143	783,480
Indian wars, 1832-1842	17	1,632	2	192	.....	.....	371	35,987	2,019	194,640
	211	20,256	4	192	.....	.....	432	41,472	4,067	390,708
Total	52,648	5,190,488	26,760	1,693,428	4,089	490,858	46,651	6,541,490	993,714	130,968,465

Average annual value of each pension \$131.79
Average annual value of each pension under the general law 163.21
Average annual value of each pension under the act of June 27, 1890..... 108.11

To the total number of pensions granted during 1898 there must be added 6,852 original and 762 restoration and renewal cases which, though allowed during 1897, were not mailed to the pension agents until after the close of that fiscal year.

TABLE NO. 2.—Number of pensioners of the various classes dropped from the rolls during the year, with the cause, and the number of each class on the rolls June 30, 1898.

Classes.	By death.	By remarriage.	Minors by legal limitation.	By failure to claim.	For other causes.	Total number of pensioners dropped from the rolls.	Total number of pensioners of all classes on the rolls June 30, 1898.
General law.							
Army and Navy	Invalids	9,925	.....	389	5,198	15,462	831,913
	Nurses	27	.....	.....	19	46	655
	Widows, etc	4,783	653	945	707	136	7,224	94,857
Total.....	14,735	653	945	1,046	5,353	22,732	427,425
Classification of widows' roll, general law:							
Widows without children.....	2,392	291	.....	326	76	3,085	66,325
Widows with children.....	202	356	.....	15	20	593	10,453
Minor children.....	5	.....	945	.....	31	981	1,836
Mothers.....	1,730	6	.....	295	6	2,037	13,572
Fathers	448	.....	.....	70	3	521	2,500
Brothers and sisters, dependent sons and daughters.....	6	.....	.....	1	.....	7	111
Act of June 27, 1890.							
Army and Navy.....	Invalids.....	11,886	.....	834	386	13,106	413,900
	Widows, etc.....	4,944	692	1,179	748	636	8,199	125,729
Total.....	16,830	692	1,179	1,582	1,022	21,305	539,638
Classification of widows' roll, act of June 27, 1890:							
Widows without children	3,282	309	.....	556	466	4,673	86,290
Widows with children	438	323	.....	52	113	926	25,945
Minor children.....	16	.....	1,179	.....	22	1,217	4,683
Mothers.....	755	.....	.....	88	10	853	5,677
Fathers	435	.....	.....	52	4	491	2,624
Helpless children	18	.....	.....	.....	21	39	510
War of 1812.							
Survivors	5	.....	.....	.....	.....	5	3
Widows.....	317	.....	.....	88	5	410	2,407
Total.....	322	.....	.....	88	5	415	2,410
War with Mexico.							
Survivors	834	.....	.....	90	40	964	10,012
Widows.....	337	20	.....	62	13	432	8,143
Total.....	1,171	20	.....	152	53	1,396	18,155
Indian wars, 1832-1842.							
Survivors	281	.....	.....	89	1	371	2,019
Widows.....	352	4	.....	74	2	432	4,067
Total.....	633	4	.....	163	3	803	6,086
Grand total	33,691	1,369	2,124	3,031	6,436	46,651	993,714

Total number of children on the rolls: General law, 18,091; act of June 27, 1890, 47,322. Total minors, 65,413.

TABLE NO. 3.—Showing the appropriations for pensions and the disbursements on account thereof for the fiscal year 1898, and unexpended balances at the close of the year.

Items of appropriation.	Appropriations.				Disbursements.			Balances.		
	Amount ap- propriated, act December 22, 1896.	Amount deficiency ap- propriation, act May 31, 1898.	Repay- ments to the appro- priation.	Total.	Amount dis- bursed by United States pension agents.	Amount disbursed by Treas- ury setle- ments.	Total amount disbursed.	Balance re- maining in the hands of United States pension agents June 30, 1898.	Balance re- maining in the United States Treas- ury June 30, 1898.	Available balances June 30, 1898.
Army pensions	\$136,000,000	\$8,070,872.46	\$11,876.68	\$144,082,749.14	\$140,824,029.73	\$100,318.98	\$140,924,348.71	\$1,388,035.86	\$1,770,364.57	\$3,158,400.43
Navy pensions.....	4,000,000	.....	143.65	4,000,143.65	3,723,932.90	3,598.19	3,727,531.09	135,040.22	137,572.34	272,612.56
Fees of examining surgeons, pensions.....	700,000	.....	10.55	700,010.55	670,885.67	.....	670,885.67	12,043.40	17,061.48	29,124.88
Salaries, pension agents.....	72,000	.....	.....	72,000.00	72,000.00	.....	72,000.00	.....	.....	.....
Clerk hire, pension agencies.	430,000	.....	.30	430,000.30	416,685.68	.....	416,685.68	9,637.26	3,677.36	13,314.62
Rent, pension agencies.....	26,130	.....	.....	26,130.00	17,579.99	.....	17,579.99	830.51	8,219.50	8,550.01
Fuel, pension agencies.....	250	.....	.....	250.00	158.05	.....	158.05	20.70	71.25	91.95
Lights, pension agencies.....	500	.....	.....	500.00	348.95	.....	348.95	44.65	106.40	151.05
Contingent expenses, pen- sion agencies	35,000	.....	.....	35,004.12	23,244.59	6,612.58	29,857.17	1,074.31	4,072.64	5,146.95
Total	141,263,880	8,070,872.46	12,035.30	149,346,787.76	145,748,865.56	110,529.75	145,859,395.31	1,546,226.91	1,941,165.54	3,487,392.45

In addition to the above there was disbursed during the fiscal year ended June 30, 1898, the following sum, chargeable to the appropriation for the fiscal year ended June 30, 1897: Fees of examining surgeons, pensions, \$223,363.41.

REPORT OF THE MARITIME CANAL COMPANY OF NICARAGUA FOR THE YEAR 1898.

DEPARTMENT OF THE INTERIOR,
Washington, December 5, 1898.

SIR: I have the honor to transmit herewith for the information of the Senate the report of the Maritime Canal Company of Nicaragua, submitted to the Department this day, in accordance with section 6 of the act of Congress approved February 20, 1889, entitled "An act to incorporate the Maritime Canal Company of Nicaragua."

Very respectfully,

C. N. BLISS, *Secretary.*

The PRESIDENT OF THE UNITED STATES SENATE.

THE MARITIME CANAL COMPANY OF NICARAGUA,
New York, December 5, 1898.

SIR: Pursuant to section 6 of the act entitled "An act to incorporate the Maritime Canal Company of Nicaragua," approved February 20, 1889, which provides that the said company shall make a report on the first Monday of December in each year to the Secretary of the Interior, and in accordance with instructions prescribing the form of such report and the particulars to be given therein, the said Maritime Canal Company of Nicaragua reports as follows:

First. That the regular annual meeting of the company was held at No. 54 Broad street, in the city of New York, on the 5th day of May, 1898, pursuant to the provisions of the by-laws, and that at such meeting Messrs. Charles P. Daly, Daniel Ammen, Horace L. Hotchkiss, Henry E. Howland, and Robert Sturgis were duly elected directors of said company to fill the places made vacant by the class whose term of office expired on the 5th day of May, 1898, and to serve for the period of three years, as provided for in the said act of incorporation. On the 11th day of July Rear-Admiral Daniel Ammen, U. S. N., one of the directors, died. His death leaves a vacancy in the class of 1901, which has not yet been filled.

Second. That the board of directors of said company as now constituted is composed of the following stockholders:

Class of 1901.—Charles P. Daly, Horace L. Hotchkiss, Henry E. Howland, and Robert Sturgis.

Class of 1900.—Frederick F. Thompson, Aniceto G. Menocal, Samuel E. Kilner, Alexander T. Mason, and George West.

Class of 1899.—Joseph Bryan, James Roosevelt, Hiram Hitchcock, and Thomas B. Atkins.

The above-named directors are citizens and residents of the United States.

Third. That at the first meeting of the board of directors held after the said annual election the following officers were duly elected to serve for the ensuing year, to wit: President, Hiram Hitchcock; vice-president, Charles P. Daly; secretary and treasurer, Thomas B. Atkins. All of the officers so elected are citizens and residents of the United States. That at said meeting the following directors were elected members of the executive committee, as provided for in the by-laws of said company, to wit: James Roosevelt, chairman; Hiram Hitchcock, Henry E. Howland, Frederick F. Thompson, and Alex. T. Mason.

Fourth. That since the organization of the Maritime Canal Company of Nicaragua 10,145 shares of the capital stock of said company have been subscribed for at par, amounting in the aggregate to the sum of \$1,014,500, of which amount \$1,007,840 has been paid into the treasury in cash; that there has been paid into the treasury from other sources \$142,581.89, making the total amount of cash received \$1,150,421.89.

Fifth. That since the organization of the company it has paid for property, work and labor done, and materials furnished in the execution of the work of construction of canal and in administration expenses the sum of \$1,146,330.58 in cash, 31,990 shares of the full-paid capital stock of the company of the par value of \$3,199,000, \$150,000 of its first-mortgage bonds, and its obligations for \$6,705,000 of the said first-mortgage bonds. It has also issued 180,000 shares of its capital stock, of the par value of \$18,000,000, in payment for concessionary rights, privileges, franchises, and other property. Two hundred and twenty-five thousand dollars of the amount first named was represented by a claim against the Nicaragua Canal Construction Company for cash advances made on account of purchase of equipment, and in liquidation of which claim the Maritime Canal Company has received and now holds in its treasury obligations representing \$518,500 of its first-mortgage bonds, in addition to 2,420 shares of its capital stock, which were transferred and delivered to Thomas B. Atkins, trustee, in liquidation of said account, to be held by him as trustee for the benefit of the company.

Sixth. That the liabilities of the company consist of the amounts still due under the concessions granted to the company, of the \$6,705,000 of bonds before mentioned, the said bonds being due to the assignees of the Nicaragua Canal Construction Company for work and labor done and materials furnished in the execution of the work of constructing the interoceanic canal, and of cash liabilities outstanding unpaid to an amount not exceeding \$100,000.

Seventh. That the assets of the company consist of its unused capital stock, of the \$518,500 first-mortgage bonds, and the 2,420 shares of capital stock received in liquidation as aforesaid, the concessions, rights, privileges, and franchises which it now owns, and of the plant, equipments, materials, lands, buildings, structures, railways, steamboats, telephone and telegraphic lines, dredges, locomotives, cars, machinery, stores, machine shops, supplies, and other property in Central America, including the lands situated between the lake and the Pacific, purchased from the Government of Nicaragua for the route of the canal, in accordance with the provisions of the Nicaraguan concession.

Work on the canal is at present suspended, for reasons given in our last annual report.

By authority of Congress, the President of the United States appointed a commission of engineers to examine and report upon the route and surveys of the Nicaragua canal; and this company placed its surveys, maps, etc., at the disposal of the commission.

In response to your communication of May 17 last, calling for information, the company reported on the 4th day of June as follows:

FIRST. PROGRESS MADE AND WORK DONE.

The axial and detailed surveys of the proposed interoceanic canal, its harbors, locks, and other accessory works, were completed in 1889, and the final location of the route from ocean to ocean practically determined. This vast and most important work was accomplished at a great expense of time, labor, and money. The engineers employed were of known and tried ability. Those in positions of chief

responsibility had had extensive practice in works of engineering construction in the United States and the tropics. The engineers, administrative staff, surveyors, and nearly all the skilled mechanics were hired in the United States and sent out under contract for at least a year's service, and several were continuously employed in Nicaragua for upward of three years. A detailed description of the proposed canal and the work to be accomplished in its construction, together with the maps showing the route thereof, as the same was finally located, was annexed to the annual report of the company for the year 1890, to which reference is hereby made for said particulars. No great public work has ever been so thoroughly and conscientiously surveyed, and the company has entire confidence in the surveys and in the estimates of cost.

In the location of the canal line the route chosen from among the many tentative lines run was that which presented the fewest difficulties. It was expected that possible changes might suggest themselves as the work progressed, but no change from the location first decided upon has since been made, except as further examination and studies have demonstrated the certainty of betterments, either by shortening the length or decreasing the difficulties and cost of construction. One or more parties of engineers have been engaged in critical examination of the topography at certain localities where previous surveys had suggested that betterments in the location or design might be practicable. In some cases, after very close examination and study, their hopes were not realized, but in one instance instrumental examinations have completely demonstrated not only the practicability, but the economy, to result from a rectification of the line.

The location previously adopted between the sites of Locks Nos. 2 and 3, involved a curve of large radius in the sailing line through the second Deseado Basin. It is now found that this curve may be eliminated, with a saving in distance of upward of 1,000 feet and a saving in earth excavation of upward of 600,000 cubic yards. A site for the Ochoa Dam has been located about half a mile below that originally chosen. The borings prove its suitability of foundation without material increase of cost over that already assigned in the estimates, and another curve in the sailing line may be eliminated and a large reduction in mass of excavation will be possible. A party of engineers was for many months engaged in boring the strata at the proposed site of La Flor Dam, which is located about 3 miles from the Pacific terminus. The results demonstrate the certainty of securing a good foundation for the dam and for the locks which are to be built at this point.

A party of engineers was also engaged for many weeks in further surveys for the minor canal required under the concession to be built between Lake Nicaragua and Lake Managua, for steamboat navigation, known as the Tipitapa Canal. This work, with the additions desired by Nicaragua, has been thoroughly studied and plans prepared for completion. At the Machuca Rapids, in the San Juan River, a considerable mass of rock has been removed, improving the navigation of the river at that point.

Criticisms of the route and surveys have prompted reexaminations, which have, in almost every instance, verified the correctness of the original surveys and estimates. For example, it was said that the Ochoa Dam was impracticable for want of rock foundation; but borings have revealed solid rock under the entire bed and banks of the river at that point. Later examinations show that there is less rock than was expected to be removed from the bed of the San Juan River, and that there will be about 3 miles less than the estimated dredging at the outlet of the lake.

Several months elapsed after the completion of the surveys before the voluminous plans and drawings prepared by the company were approved by the Government of Nicaragua and the formal commencement of construction authorized, during which time a corps of engineers was kept constantly employed and much valuable preparatory work was done, such as the commencement of the erection of permanent quarters, wharves, storehouses, clearing the ground, and accumulating supplies, tools, machinery, etc.

The necessity of securing a safe entrance from the Atlantic to the old port (which until 1860 was easily accessible to vessels of upward of 20-foot draft) was realized as indispensable to economical and rapid progress, and therefore the first work of actual construction was in execution of the engineers' plans for restoring the harbor. One of the means to accomplish this end was the erection of a breakwater to protect the entrance. This massive work, which will ultimately absorb much of the rock excavated from the divide cut, has been pushed out about 1,000 feet, and has been filled in with brush mattresses, rock, and hydraulic-cement concrete.

Quarters for accommodation of the workmen and storage for supplies were created near this work, and a railroad track was laid upon the breakwater and extended landward to facilitate the handling of building material and other supplies. The bar in front of the old San Juan Harbor has, since 1860, been one of the most difficult on the coast. The breakwater was constructed from the beach to and across this bar, and, although it encountered the full force of the waves, it was carried forward through the heavy surf without interruption on account of the weather and

without accident of any kind. As it advanced it afforded a partial shelter to the beach to leeward and also served as a barrier to the moving sand, which, impelled by the currents and prevailing winds and driven constantly to the westward, built up and maintained the sand spit that thirty years ago closed the old port of San Juan. This artificial interruption to the operation of the winds and current permitted countervailing forces of nature to come into play, so that by the time the pier had been pushed out 600 feet the sand beach under its lee was swept away and a channel formed communicating from the open ocean to the old harbor, and restoring it to the extent of permitting the entrance of light-draft seagoing vessels at a point where, six months before, there was a sand bank 3 or 4 feet above sea level. The attainment of this result was without the assistance of any dredge or any artificial aid other than that afforded by the breakwater.

It is evident from this experience that the plan of the engineers for the restoration of the port of San Juan is not only theoretically sound, but practicable. Although, since cessation of work, variations have occurred in the conditions of the channel, which at times has been nearly closed, yet it only remains to extend the pier to the proposed length in order to realize complete and satisfactory results, which no doubt can be maintained with, at most, but temporary and inexpensive dredging.

The construction of permanent buildings was begun in the summer of 1889. The completed structures are all of wood (pine from the United States), and are roofed with corrugated galvanized iron. The offices, quarters, and hospitals are neat and comfortable, being ceiled and painted, and provided with wide verandas outside. The permanent buildings thus far erected are in the immediate vicinity of San Juan, where the general headquarters are located and where the most important operations have been concentrated. They consist of five groups, covering an area of about 1½ acres, and have a floor space as stated below:

	Square feet.
Headquarters.....	13, 986
Hospital	14, 174
La Fr depot	21, 864
Railroad headquarters	18, 778
Camp Cheney.....	7, 100
Total	75, 902

Besides the above, numerous and extensive wharves equipped for unloading freight, sheds, small outhouses, water tanks, etc., were constructed. The machine and smiths' shops were equipped with a varied and extensive assortment of modern tools. A tramway connects the more important of these establishments.

Work in clearing the canal line of forest growth was begun near Greytown in January, 1890, and for a distance of about 10 miles back from the coast a clearing has been made of 486 feet in width. Similar work was commenced on the west side of Lake Nicaragua in the month of November, 1890, and for 9 miles the ground there is ready for construction work. The company paid the Government of Nicaragua \$50,000 for the lands required from the lake to the Pacific Ocean.

A telegraph line to the interior, connecting with the telegraph systems of the country and the ocean cables, was one of the first works commenced, and it was soon pushed through to Castillo, covering, with its loops, a distance of 60 miles. In addition to this telegraph service, all the offices and the more important camps and stations were put in telephonic communication.

As the heaviest single body of work to be accomplished on the whole line is concentrated within a distance of 3 miles at the rock cutting, the "Eastern Divide," and as the time required to complete the canal will necessarily be measured by the time spent in opening this deep cut, it was considered important to install a plant for the work at the earliest date possible. The difficulties of transporting to the divide the quantity of machinery, etc., needed for the heavy rock cutting to be done at that point made requisite the immediate construction of a railroad. This work was commenced in the summer of 1890 and was pushed forward with marked success. The line traverses what has always been considered an impassable swamp, and for the first 10 miles there are but 4 miles of hard ground. Soon after beginning the roadbed heavy rains set in and the swamp was flooded to a depth of from 1 to 4 feet.

All the earth used for filling had to be brought from a distance by construction trains, which necessitated laying the track first and making the required embankment afterwards. To accomplish this a heavy corduroy of logs was laid for many miles. These logs, which were procured from the neighboring forest, were rolled, floated, or dragged by man power alone to the line of the proposed track, and there laid transversely as compactly as possible. Upon them were placed longitudinal stringers, consisting of native tree trunks, on which the railroad ties were laid, and upon these the steel rails were then spiked down. Trains loaded with earth were

run out over the structure and the earth dumped and packed into the interstices and under the ties, which were raised gradually by the workmen until the desired grade was secured. There were 6 miles in all of this construction through swamps, the men working most of the time in water reaching above the knees and often to the waist or armpits. The material used for grading and ballasting the first 8 miles of the roadbed was taken from the canal prism near the harbor and distributed along the line by construction trains, the cars being loaded by means of a steam shovel or navy capable of delivering 1,300 cubic yards per day.

There are several places along the railway where streams and other water courses are crossed. These are spanned by pile bridges, and a powerful steam pile driver was used in their construction. The portion of road already completed is the most difficult of the whole line, and but 7 miles now remain to be built to reach the Eastern Divide. There are several miles of side track, switches, etc., already in place, and the road is equipped for construction work with 4 locomotives, 50 cars, steam shovel, ballast unloader, and all other requisite appliances. All the cross-ties and bridge timbers are of Northern pine, charged with 16 pounds creosote oil to the cubic foot. At the terminus of the harbor is a fine wharf, 264 feet long, built in the best manner of creosoted timber and equipped with modern steam conveniences for handling freight rapidly. The survey for the remainder of the line, extending to the San Juan River at Ochoa, has been completed; in fact, two locations have been surveyed and profiles prepared in sufficient detail to permit accurate estimates of cost. Between Lake Nicaragua and the Pacific the railroad line is also located and everything made ready for its construction, which must necessarily precede the inauguration upon a larger scale of the work of excavation.

In the summer of 1890 there was purchased from the American Contracting and Dredging Company the extensive and valuable plant used so successfully on the eastern end of the Panama Canal. The property consisted of 7 dredges, then the most powerful ever built, 2 fine tug boats, 20 lighters, several launches, the equipment of an entire machine shop, stationary engines, pumps, and a vast quantity of tools, spare parts, materials for repairs, etc. Dredging on the canal line west of the harbor was carried forward, and a point well inland was reached by an open channel, 17 feet deep and varying in width from 150 to 230 feet, which drains the swamp and lowers the level of the swamp waters, thereby securing for the railroad embankment immunity from injury by flood waters. No obstructions to free dredging have been encountered so far, although the canal has now been opened for a distance of about 8,750 feet.

Natives of Central America and negroes from the island of Jamaica have been employed for unskilled labor, and all employees have been not only housed and fed by the company, but also supplied with medicine and hospital attendance. The rate of wages paid to ordinary laborers varies from 20 to 30 soles per month, and it is evident from past experience that an abundance of acclimated labor, entirely adapted to the company's needs, is readily obtainable from the localities named. No Chinese or other Asiatic workmen have been employed.

In addition to the results already achieved, as hereinbefore set forth, the company organized and established in Nicaragua a complete hospital service and perfected the sanitary arrangements in and about its camps and headquarters. In the early part of 1889 the medical work was carried on by assistant surgeons located at different points along the canal route, but the department was not regularly organized until October of that year, when a chief surgeon was appointed and the hospital at headquarters was virtually completed and made ready for occupation.

The hospital consists of 13 buildings, of which 5 are two-story structures surrounded by broad verandas. The remaining buildings of the group are one-story structures, for the most part built of wood. The total capacity of the hospital is 125 beds. It is situated on the beach, about 500 feet from the surf, and was equipped with a first-class pharmacy and operating room. In 1890 it was found necessary to erect, 8 miles up the railway line, at Camp Perez, a temporary hospital, known as Temporary Hospital No. 1, accommodating about 50 patients. This hospital consists of one large building, containing, in addition to the general laborers' ward, a pharmacy and nurses' rooms. A second building was erected for culinary purposes. Medical stations were established and operated at different times at points remote from the hospitals, according to the necessities of the work. They were established at Camp Francis, on the beach; Carazo, on the San Juan River; Poco-Mas-Arriba; Satisfaction, on the Desado River; Lake Silico, San Francisco River, and at Railway Camp No. 1. These stations are all on the Atlantic division.

On the Pacific division stations have been operated at different times at Rivas and Tipitapa. In connection with headquarters hospital an efficient ambulance service was maintained. The company also operated a road ambulance to stations on the beach and a car ambulance between the hospital and La Fe, at which latter place connections were made with the railway terminus, the navigation docks, and the breakwater. On the railway line an ambulance caboose car was used. Any existing

opinion regarding the unhealthfulness of the climate in Nicaragua is erroneous. Far removed from the severity of the northern winters, though geographically in the Tropics, the temperature is moderate and equable throughout the whole year. The northeast trade winds temper the atmosphere and have a marked influence. The mean temperature during 1890 was 77.25° F. In 1891 there was an extreme range of 28°, from a minimum of 67° to a maximum of 95°, or a mean of 81° F. This difference of mean temperature was probably due to the decrease of the annual rainfall.

It has been asserted that the country teems with fatal maladies, and that the canal employees would be exposed to severe types of fever as soon as the work of excavation was commenced. This, however, has not proved to be the case, as an examination of the records and statistics kept by the medical department will show. The dredges have already advanced over a mile into the swamps without encountering anything but sand and light loam, which, exposed to the sun, produces no unusual sickness, and the borings prove that the soil as far as the foothills, or the entire width of the swamp lands, is of a similar character.

Most of the diseases met with have been mild in type. This is especially true of bronchitis and pneumonia. The cases of fever are of the remittent or intermittent type, very amenable to treatment, and not of as long duration as in the United States. Chagres fever is entirely unknown as an epidemic disease, and in 1890, when a number of cases were brought on towing steamers in the service of the company from Colon to Nicaragua, every one taken to the canal hospital recovered, while of those admitted from the same ships to the Colon hospital a number died. It is proper to say that the medical organization and the system of sanitation inaugurated by the company proved itself to be exceedingly valuable in maintaining a death rate which is not only very greatly below that of any other known large work of construction in its hospital records, but also is very materially below the death rates of hospitals in the United States.

These results may be summarized as follows:

- (1) The prosecution and completion of the final surveys for location and construction and surveys for economical improvements as to details.
- (2) The subterranean examinations of the strata requiring removal by means of borings with the diamond drill.
- (3) The demonstration of the practicability and safety of the required harbors.
- (4) The construction of extensive wharves and landing facilities.
- (5) The erection of permanent buildings for offices, quarters, hospitals, storehouses, shops, etc.
- (6) The building of a large number of temporary camps along the line for accommodation of employees.
- (7) The completion of a telegraph line permitting ready communication with the work.
- (8) The clearing of the canal line of timber for some 20 miles.
- (9) The completion of surveys for location and of plans for construction of the railroad system, and the construction and equipment of 11 miles of this line.
- (10) The acquisition of valuable and extensive plant.
- (11) The opening of over a mile of the canal.
- (12) The acquirement from F. A. Pellas, in accordance with the Nicaragua concession, of the exclusive franchise for the steam navigation of the San Juan River and Lake Nicaragua.
- (13) And lastly, what is felt to be the most important result of all, is the demonstration, secured by experience, of the salubrity of the climate, the efficiency of labor, and the sufficiency of the estimates of the chief engineer for the harbor and canal dredging and railroad work.

The Government of Nicaragua, by a communication dated November 8, 1890, has officially recognized and declared that the company has more than complied with the provisions of article 47 of the concession, requiring the expenditure of \$2,000,000 during the first year of the work. This formal acknowledgment confirms the company's title to the concessionary rights for a term of ten years in which to complete the canal, and to extensions contemplated in the concessions.

In justice to the company the statement should be made that many thousands of dollars were expended by the company in reopening the route for, and in otherwise aiding, the Nicaragua Canal Commission, appointed by authority of Congress in 1895.

SECOND. PROPERTY AND PRESENT CONDITION.

The accumulated property before referred to is represented by surveys, solutions of important problems, works of construction, plant, etc.

The company holds the concessions from Nicaragua and Costa Rica, and the charters from the United States and the State of Vermont. The concessions concede to the stockholders of the company 6 per cent of the company's securities. These

franchises and all that they include and imply, as the basis upon which the enterprise must necessarily rest, are of great value, and they are not likely to be ever again so potently and completely associated together.

These concessions convey most valuable rights of navigation of the San Juan River, and other riparian rights. The concession from Nicaragua carries land estimated at 1,000,000 acres in extent, and that from Costa Rica lands estimated at 300,000 acres, the total value of which, including mining rights, must be very large.

In August, 1893, work of construction was suspended (as has been stated in annual reports of the company) because of the financial embarrassment of the construction company which had contracted for the construction of the canal. Since the suspension of construction the company has endeavored to protect all of its property, in order that it may be available on the resumption of work. In that climate, however, deterioration is rapid, and the dredges especially have suffered accordingly. The canal excavations retain their original depth and form, and the embankments are undisturbed. The buildings, railroad, and equipment are in fair conditions, all things considered. The great breakwater, 1,000 feet long, at the entrance of the canal is permanent and solid, and fully meets the expectations of the engineers.

THIRD. EXPENDITURES.

Since undertaking the canal enterprise the company (including its agents) has expended—

For preliminary expenditures incident to procurement of concessions..	\$280, 000. 00
For surveys, plant, construction, navigation, rights, and lands.....	4, 287, 736. 73
For administration and care of property.....	268, 692. 24
	<hr/>
	4, 836, 428. 97
Cash obligations, estimated	300, 000. 00
	<hr/>
	5, 136, 428. 97

The interest on these expenditures to June 1, 1898, at 6 per cent, would amount to \$1,864,420.

FOURTH. THE BOND AND STOCK OBLIGATIONS.

Bond obligations for work done.....	\$6, 855, 000
Less bonds taken in liquidation.....	518, 500
	<hr/>
Net bond obligations.....	6, 336, 500
	<hr/>
Stock sold.....	1, 014, 500
Stock paid for concessions	12, 000, 000
Stock issued to Nicaragua	6, 000, 000
Stock to be issued to Costa Rica.....	1, 500, 000
Stock paid for work	\$3, 199, 000
Less stock taken in liquidation.....	242, 000
	<hr/>
	2, 957, 000
	<hr/>
Total stock obligation	23, 471, 500

The company now calls your attention to the statement made by its president to the Select Committee of the United States Senate on the Construction of the Nicaragua Canal, January 28, 1897, as to the relations between the company and the Governments of Nicaragua and Costa Rica, and printed as Senate Doc. No. 102, Fifty-fourth Congress, second session, and now annexed to this report as Exhibit A.

On the 15th of June, 1897, the Government of Nicaragua made a contract with the Atlas Steamship Company, an English corporation, granting the latter navigation rights on Lake Nicaragua and the San Juan River and other privileges, which contract conflicts with the concession held by this company.

On the 24th day of February, 1898, the Government of Nicaragua made a contract with J. La Motte Morgan, authorizing him to obtain the recognition, in any bills before the United States Congress, of the right of Nicaragua to 6 per cent of bonds as well as 6 per cent of stock of the Maritime Canal Company. Mr. Morgan presented the subject to the company and demanded 6 per cent of the bonds, and was

informed that the company's construction of article 50 of the concession did not warrant this claim of Nicaragua, and that, while the company would be pleased to have Nicaragua receive every benefit to which she could possibly be entitled, yet this difference of construction of article 50 could only be adjusted by arbitration, as provided in article 55. This proposed arbitration was declined.

On the 15th of August last the president gave you information about a certain syndicate, and wrote as follows:

The Maritime Canal Company was chartered by Congress in the face of a combined European and American opposition. Its stock, under the terms of the concessions, was publicly offered to the people of the nations of the world. The amount subscribed was by the incorporators, who still retain it, and whose faith in the enterprise has never wavered. They made the payments and expenditures required under the terms of the concessions. Soon afterwards a resolution was offered in the United States Senate and referred to the Committee on Foreign Relations, directing an examination into the affairs of the company, with a view to ascertaining what part, if any, the Government of the United States should take in the construction of the canal. This led to the introduction of a bill amending the charter, which has since been followed by many bills of similar purport. The effect of the proposed Congressional legislative action has been to cause capital at home and abroad to say that it would await such action, or to say that only the Government itself could construct and protect so large a work with such vast international relations and responsibilities. The financial panic of 1893 caused the cessation of work by its agents.

This condition of affairs has necessarily led to a waiting attitude on the part of the company, during which time its franchises and possessions have been actively coveted by aspiring rival routes and interests, sometimes under the indirect inspiration of foreign powers; and it has encountered criticisms and direct opposition of enemies in the United States and Central America.

In the face of all this the company has remained solvent and faithful to its trusts, and it has protected the enterprise and preserved it for the people and Government of the United States. Now that what the company has believed in and patiently labored and waited for these long years has recently been so clearly demonstrated to the understanding of everyone to be a national necessity, it occurs, as before in human experience, that others wish to acquire it. But it would be a work of manifest injustice for any combination of our citizens at this late day, directly or indirectly, to attempt to supplant this company of American citizens in the rights and property of an enterprise they have so truly conserved until all could clearly see that the fullness of time had come.

Congress has the right to amend the charter of the company in such terms as it deems wise, and can therefore make its own conditions. If it provides funds for the construction of the canal, the canal is in reality constructed from that hour.

The Maritime Canal Company of Nicaragua has only the desire that the canal may soon be a reality, whatever the result may be to its incorporators; and it confides in the honor and justice of the Government that created it.

The syndicate referred to was formed and parties representing it went to Nicaragua and Costa Rica to obtain concessions. Later the syndicate became convinced that it was unwise to obtain concessions under existing conditions, and it dissolved.

The Government of Nicaragua, however, without being informed of this dissolution, entered into an agreement with the parties claiming to represent the syndicate, which agreement is in violation of the rights and interests not only of this company, but of the United States and of Costa Rica.

In witness whereof the Maritime Canal Company of Nicaragua has caused its corporate seal to be hereunto affixed and these presents to be signed by its president and secretary this 5th day of December, A. D. 1898.

[SEAL.] THE MARITIME CANAL COMPANY OF NICARAGUA,
HIRAM HITCHCOCK, *President*.
THOS. B. ATKINS, *Secretary*.

Hon. C. N. BLISS,
Secretary of the Interior.

STATE OF NEW YORK,

City and County of New York, ss:

Hiram Hitchcock, being duly sworn, says that he is the president of the said The Maritime Canal Company of Nicaragua; that he has read the foregoing annual report and knows the contents thereof, and that the same is in all respects correct and true.

HIRAM HITCHCOCK.

Sworn to before me this 5th day of December, 1898.

[SEAL.]

V. BIGELOW,
Notary Public, New York County.

STATE OF NEW YORK,

City and County of New York, ss:

Thomas B. Atkins, being duly sworn, says that he is the secretary of the said The Maritime Canal Company of Nicaragua; that he has read the foregoing annual report and knows the contents thereof, and that the same is in all respects correct and true.

THOS. B. ATKINS.

Sworn to before me this 5th day of December, 1898.

[SEAL.]

V. BIGELOW,
Notary Public, New York County.

STATE OF NEW YORK,

City and County of New York, ss:

On the 5th day of December, in the year 1898, before me personally came Thomas B. Atkins, known to me to be the secretary of The Maritime Canal Company of Nicaragua, and with whom I am personally acquainted, who, being by me duly sworn, did depose and say that he resided in Roselle, N. J.; that he was the secretary of The Maritime Canal Company of Nicaragua; that he knew the corporate seal of said company; that the seal affixed to the foregoing report was such corporate seal; that it was so affixed by the order of the board of directors of said company, and that he signed his name thereto by the like order as secretary of the said company.

And the said Thomas B. Atkins further said that he was acquainted with Hiram Hitchcock, and knew him to be the president of said company; that the signature of the said Hiram Hitchcock subscribed to the said instrument was in the genuine handwriting of the said Hiram Hitchcock, and was thereto subscribed by the like order of the said board of directors, and in the presence of him, the said Thomas B. Atkins.

In witness whereof I have hereunto set my hand and official seal this 5th day of December, 1898.

[SEAL.]

V. BIGELOW,
Notary Public, New York County.

EXHIBIT A.

[Senate Document No. 102, Fifty-fourth Congress, second session.]

Mr. Morgan, from the Select Committee on the Construction of the Nicaragua Canal, reported the following statement, made on examination, by Hiram Hitchcock, president of the Maritime Canal Company

of Nicaragua, as to the existing relations between that company and the Governments of Nicaragua and Costa Rica:

THURSDAY, *January 28, 1897.*

The committee met at 10.30 a. m.

The CHAIRMAN. This meeting has been specially called to hear the statement of Mr. Hiram Hitchcock, president of the Maritime Canal Company of Nicaragua, who has been summoned by the committee to give the committee information with reference to the canal company.

I will first ask you, Mr. Hitchcock, what differences, if any, your company has had with the Governments of Nicaragua and Costa Rica in connection with the building of the canal?

Mr. HITCHCOCK. The same is true with regard to any substantial differences as was true when I was first called before the Senate Committee on Foreign Relations, June, 1890. I then said:

I may as well perhaps say, as you ask me the question, with reference to that, that there is no point of difference remaining unsettled between the company and Nicaragua at the present time. That leads me to say (without assuming to be able to give you gentlemen the least information on that point) that it is proper that you should know from us officially the relations which exist between us and Nicaragua, and in fact Central America generally. It is, as I said before, perhaps unnecessary to state these facts, but there are complicated questions. The rights to the San Juan River, the boundary questions between Nicaragua and Costa Rica, always come up when any question of transit across that isthmus arises. You will find that under Tyler's Administration, in 1842, this matter was somewhat considered by Mr. Webster, and it has been before every Secretary of State in some aspect from that time to this. It involves the canal question. Now, the question of the respective rights in this particular route was supposed to have been settled under the treaty of limits between those two powers of 1858. Under that treaty, while Nicaragua owns the entire route, yet Costa Rica has the right to navigation and has the right to be consulted.

Now I come down to the point where it concerns this particular concession. The Nicaragua Canal Association, which was formed in 1886, sent out early in 1887 to obtain a concession to build this canal. Nicaragua had the right to give this concession, and in it gave us the fullest freedom to locate the route; but, for the reason that the treaty of 1858 gives to Costa Rica the right of navigation and that, in the construction of the canal, waters would be made to overflow Costa Rican territory, Costa Rica took the ground that Nicaragua should have recognized that treaty to the extent at least of obtaining the consent of Costa Rica to this concession. Nicaragua did not do that. We accepted the concession in good faith, believing Nicaragua had the absolute right to grant it. The first thing we encountered was a protest, thirty or forty days thereafter, from Costa Rica, announcing that the concession was of no value because she had not been consulted. The Government of Nicaragua could have consulted her before, and have gone on and satisfied her for any damages which the overflow might do to her territory, but we were left to make terms with Costa Rica. We then for six months negotiated to obtain a concession from Costa Rica, when this was accomplished. Nicaragua immediately protested against our concession from Costa Rica. We assured Nicaragua that we had accepted the concession from Costa Rica simply in the nature of a quitclaim of any rights she might have: and when we formed our company and accepted the Costa Rica concession we accepted it only in so far as it did not conflict with the territorial rights and proprietary interests of the Republic of Nicaragua. Thus we were entirely open and frank in the whole transaction.

Now, you will readily see that up to that point it was useless to talk about the sale of bonds with the protest of either Government pending. Then when the first expedition sent out after the Maritime Company was organized commenced work on the 3d of June, 1889, Nicaragua officially notified us that, while she would protest against our concession from Costa Rica, yet she would not go beyond protesting and would not interfere with the construction of the canal. But in July Nicaragua ordered the stopping of our work at Greytown. We did not pay attention to that order, because she immediately modified it by saying that she would not regard the work as an official commencement of permanent work. The troubles continued and were fostered by parties from England, whose names I know, who wanted to have the 24th day of October arrive and the Government of Nicaragua not recognize that we had begun our work, so that our concession would lapse. On the 16th of September, 1889, the Government of Nicaragua notified us officially that if we did not confine ourselves within her limits, thereby ignoring any rights or claims of Costa

Rica, she would not approve our surveys nor recognize the commencement of the work of construction, and that on the 24th of October she should consider our concession as having lapsed.

This course of Nicaragua was so unjust that I went immediately to the Government here, through the State Department. I stated the case fully. Mr. Blaine met the question with great fairness and promptness, and immediately wired to the American minister at Central America (Mr. Mizner) to go to Nicaragua and say to the Nicaraguan Government that he was surprised at the report of the attitude of the Nicaraguan Government toward this company, and wished him to examine into the facts and report to the State Department here, and at the same time to assure the Government of Nicaragua that the Government of the United States would not remain passive and see the rights of its citizens threatened. That dispatch of Mr. Blaine had the desired effect. Mr. Mizner and Mr. Hall, our permanent agent there, arranged a plan by which Nicaragua could recede from her position with dignity, which was in the form of a joint declaration. On our part we agreed to go on and build the canal in good faith under the concession and the Nicaraguan Government agreed to approve the surveys and work, so that the work of construction was recognized officially as commenced on the 8th of last October. I will submit copies of the telegrams between the President of Nicaragua and myself.

[Copy of telegram sent October 9, 1889.]

His Excellency PRESIDENT OF NICARAGUA,
Managua :

Please accept my sincere congratulations upon the happy termination of all differences, and the company's assurance that it will vigorously prosecute the work of the canal in the interest of Nicaragua and the whole commercial world.

HIRAM HITCHCOCK,
President Maritime Canal Company of Nicaragua.

[Translation of telegram received from the President of Nicaragua in reply to ours of October 9.]

MANAGUA, *October 11, 1889.*

President of the Maritime Canal Company of Nicaragua :

I congratulate myself jointly with you upon the happy settlement of the canal question, and with the greatest satisfaction I offer the cordial assistance of my Government to the efforts of the company for the realization of this grand enterprise.

ROBERTO SACAZA,
President of the Republic.

Mr. Hitchcock explained that this was mainly a repetition of his statement before the Committee on Foreign Relations, June 5, 1890.

The CHAIRMAN. Mr. Hitchcock, will you please relate to the committee in detail your interview with Mr. Blaine just referred to?

Mr. HITCHCOCK. I have here a memorandum, made at the time, of a confidential interview with the Hon. James G. Blaine, Secretary of State, in Washington, on the 7th of May, 1889, at which were present ex-Chief Judge Charles P. Daly, Engineer A. G. Menocal, and myself. I stated to Mr. Blaine that the Maritime Canal Company of Nicaragua, chartered by Congress, had just been organized, and recited to him the history of the enterprise up to that time, including some of the numerous interests opposed to the construction of the canal, and that the opposition had in vain endeavored to induce President Cleveland not to sign the charter of the company. The last move of the enemies of the canal was to bring an ineffectual suit in New York to prevent our organizing under the charter of the United States.

Mr. Blaine gave us some valuable information with reference to the relations of the United States to the Central American States and then said that the canal must be built and controlled by the United States, and he believed that more tonnage would pass through it in a short time after its construction than was passing through the Suez Canal.

I suggested to Mr. Blaine that it might be proper for the Government to say to us that it expected us to faithfully comply with the charter and build the canal, and also state to the Governments of Nicaragua and Costa Rica that it would expect them to afford us every facility for building the canal under the respective concessions. Mr. Blaine then said:

I serve notice on you now that the Government does expect you to execute the charter faithfully and to build the canal, and if you do so you will have the Government with you. I will also cable the minister to Central America to go to Managua to look after our interests, and will send for the ministers to Nicaragua and Costa Rica and talk with them.

Our object in this conference was to determine the fact that we could go on with the work of building the canal and rely upon the support and protection of the United States, the power that had given us the charter, and we felt fully satisfied on that point.

I sent to Mr. Blaine, at his request, copies of all papers connected with the canal, beginning with the concessions.

I will say here that messages of congratulation on the organization of the company May 7 were exchanged between President Carazo, of Nicaragua, and myself, as president of the Maritime Canal Company.

Not long after this the Nicaraguan minister at Washington telegraphed his Government about the organization of the Canal Company, and said:

Costa Rica insists upon a director. If he remains, Nicaragua must recall its director. The company observes both concessions.

After our agent in Nicaragua had talked with President Carazo about this, the President instructed the minister in Washington to limit himself to protest, and assured our agent that Nicaragua would not hinder the beginning of the work. On the strength of Mr. Blaine's request to keep him fully informed, I wrote him June 21, 1889, stating that I had that day received a letter from Hon. Henry C. Hall, former United States minister to Central America, who had become our agent at Central America, advising me by cable that Nicaragua proposed to stop our work, which had been going on since June 3, on the ground that our surveys had not yet been approved by her engineers. I then wrote:

Our surveys were long since completed at great expense and received the approval of our engineers, and also of the able advisory board of five American engineers. Three months ago they were submitted to the two engineers appointed by the Government of Nicaragua.

And this obstruction to our work was notwithstanding the letter of Minister Zavala to Minister Hall on the 12th of October, 1888, in which Zavala says that the Government of Nicaragua—

Will not place any obstacles to the construction of the canal in accordance with her concession, but on the contrary will contribute with all those facilities within the power of the Government, anxious as it is to see the work carried on to a successful termination.

On the 16th of July, 1889, I went to Washington by request of the minister of Nicaragua, and at his request endeavored to allay any unpleasant feeling that existed between the Governments of Nicaragua and Costa Rica with reference to the canal concessions. He requested me to confer with the minister of Costa Rica on that subject. When I reached the residence of the latter he was about sending for me, and showed me a telegram from the President of Costa Rica, asking me, as president of the Maritime Canal Company, to obtain the mediation of

the United States Government. The result of repeated conferences between us was a letter addressed by me July 18, 1889, as follows:

MARITIME CANAL COMPANY OF NICARAGUA,
New York, July 18, 1889.

DEAR SIR: The Maritime Canal Company of Nicaragua respectfully asks you to direct the American minister at Central America to say to the Governments of Nicaragua and Costa Rica that, having learned of serious differences between those two Governments which affect the Maritime Canal Company of Nicaragua, the Government of the United States offers its mediation in regard to the same, and requests the said Governments to give their resident ministers at Washington full powers to confer with the president of the Maritime Canal Company of Nicaragua as to those differences, and then, with him, to submit the same and all questions relating thereto to the President of the United States for his decision, which shall be final and binding upon each and all of the said parties.

Very respectfully,

HIRAM HITCHCOCK,
President.

HON. JAMES G. BLAINE,
Secretary of State.

This letter is approved by the ministers of those countries.

This letter, unfortunately, did not reach Mr. Blaine, who was absent from Washington, until some weeks afterwards.

On the 16th of September, 1889, I addressed Mr. Blaine the following letter:

MARITIME CANAL COMPANY OF NICARAGUA,
New York, September 16, 1889.

DEAR SIR: A crisis in the affairs of this company being at hand, it becomes necessary to submit the case, through you, to the Government of the United States, that we may be advised and protected. This is made easy, on account of the great interest that you personally take in the enterprise and the full liberty you have always given me to come to you. That we shall be protected through your wise aid and counsel I well know and have known, since your cordial assurances to that effect in Washington when I went out with Judge Daly and Chief Engineer Menocal, on the 7th of May, to announce the organization of the company under the charter granted by the United States. From that day we have felt, and now feel, that we can go in and build the canal, and rely upon protection by the power that granted us a corporate existence.

I have formally asked in writing the friendly aid of the Government, as will appear from my communications to you of June 21 and July 18, and I am aware that you directed Minister Mizner to Managua, where he now is. I have also written you from time to time of the progress of our affairs.

In my last letter, of August 1, I strongly protested against the position taken by the Government at Nicaragua with reference to this company. On the 17th of August the Hon. Henry C. Hall, our agent at Nicaragua, was received very warmly by the new President, Dr. Sacaza, and had a most gratifying interview.

On the following day, August 8, Mr. Hall cabled me as follows:

"I have seen the President. He is favorably impressed with everything, and I have no doubt that matters can be settled in accordance with your wishes."

But on August 28 Mr. Hall wrote as follows:

"For a long time I have been convinced that there is some secret influence at work with the Nicaragua Government adverse to the company. This influence, in my opinion, is British. I don't say it comes direct from the British Government, but it comes from British capitalists, who are anxious to get control of the enterprise. Mr. Climie tells me, as mentioned in a former letter, that the Blackman scheme could obtain all the capital it might need in London, and from what he let drop at the same time I was satisfied that his partner, Mr. Passmore, had conferred with Mr. Blackman in London, and that he (Climie) had conferred with him in New York. This influence has been more than ever apparent since the death of Mr. Carazo. I had counted upon Modesta Barrios as a friend of the enterprise to be relied upon. I now find him imbued with the same ideas that were entertained by Urtecho in regard to the Costa Rica contract—that is, that while that contract exists Nicaragua must not permit the commencement of canal work; and further, that if on the 24th of October next, the limit of time which they claim for the commencement of the work, the company shall not have released itself from Costa Rica, the Nicaragua Government shall then declare its concessions forfeited. And these views, he says, are those of his associates and of the president. A few days before Carazo's death he (Barrios) expressed to me that the action of the Government in refusing to permit the com-

menacement of canal construction was unjustifiable. What influence could have been brought to bear upon him since he became a member of the cabinet is more than I can imagine. The object of all this is clear to me. They hope to bring about a conflict between Costa Rica and the company; then Nicaragua will break with the company, and the latter will be left without the support of either. As matters now stand, Costa Rica is in honor bound not to permit that the canal shall fail through her contract with the company, nor that Nicaragua shall so contemptuously ignore it.

President Bogram, of Honduras, has sent as commissioner to Nicaragua and Costa Rica Señor Manuel Colindres, one of the most prominent and able public men of that State.

"He expects to receive the same appointment from the President of Guatemala. His mission is solely in regard to the canal, in whose success both Presidents take great interest. I have had several conferences with him; have given him all the information at my disposal. He considers the attitude of the Nicaraguan Government wholly untenable. Before doing or saying anything to the Government, he will await the arrival of Mr. Mizner, so as to act in concert with him."

To-day Dr. Guzman notifies me, through Engineer Menocal, that he wishes me to call a meeting of the board of directors of this company (and which I have called for Thursday, the 19th), to present an important communication or ultimatum from his Government, the full nature of which I do not know, but one part of it is a demand that we shall break our contract with Costa Rica. The board will receive this official paper, and before acting upon it will undoubtedly appoint a committee to confer with you in this exigency.

I shall be glad to know by the bearer that you receive this, and at what time and place it may be your pleasure to receive such committee. Dr. Guzman will insist on an immediate reply, which it is not likely we will be able to give without first having a conference with you.

I was in hopes when you "served notice" on me personally, May the 7th, that the United States expected and required us to comply with our charter and build the canal, and also notified the ministers of Nicaragua and Costa Rica that the United States expected those two Governments would not obstruct, but would aid in the great work, that all danger of difficulty had passed; but it seems they have paid no attention to the warning, and the assurances of the company that it would faithfully carry out its concessions under its charter, which it has thus far done, and our presence there in force and quietly at work since June the 3d has not been received by them in a proper spirit.

Very respectfully,

HIRAM HITCHCOCK.

Hon. JAMES G. BLAINE,
Secretary of State.

In this I inclose the following memorandum:

MEMORANDUM CONCERNING THE COSTA RICA CONCESSION.

The following is from the opinion of the Hon. Joseph E. McDonald, one of the incorporators of this company, and formerly counsel of the Republic of Nicaragua:

"The Menocal-Zeledon contract has been rendered necessary by the fact that at the time the Nicaragua concession was negotiated, Nicaragua assumed that the treaty of 1858 between herself and Costa Rica was not in force, and that after the President (then Cleveland) had declared it to be in force, and that the rights of Costa Rica (under Article VIII) to be consulted with respect to any canal grant across the territory of Nicaragua that involved the valley of the San Juan River was more than advisory, it has then become necessary for the company to negotiate with Costa Rica or to entirely disregard her rights under that treaty."

I will add what I have before stated to you, that Nicaragua herself wished the company to come to terms with Costa Rica, and the company regards the Costa Rica concession as merely in the nature of a quitclaim. And the Maritime Canal Company accepted this concession, with the following reservations:

"It is hereby understood, however, that the said concession is accepted by the Maritime Canal Company of Nicaragua upon the condition that nothing therein contained shall be construed to affect the sovereign rights or propriety in interests of the Republic of Nicaragua, so far as the same may have been established by the treaty of April 15, 1858, between the Governments of Nicaragua and Costa Rica."

To this Mr. Blaine sent the following reply:

Personal.]

BAR HARBOR, September 17, 1889.

MY DEAR SIR: I have your favor and the accompanying memoranda. I am sorry to hear of the impending difficulties in the way of the Canal Company. But I do not think that Nicaragua or Costa Rica or both together will deprive you of your rights.

I go hence on the 23d instant to Richfield, N. Y., to witness the marriage of my son on the 26th, thence to New York and Washington, reaching the latter on the 30th of September.

Very respectfully,

JAMES G. BLAINE.

HIRAM HITCHCOCK, *Esq.*

On the 23d of September, 1889, I met Mr. Blaine in Boston by appointment, and was accompanied by Judge Daly and other gentlemen connected with the canal enterprise.

I stated to Mr. Blaine that we had received a communication from the Government of Nicaragua notifying the company that its concession would be forfeited October 24 unless the causes referred to in their ultimatum were removed—that is, unless we broke our contract with Costa Rica. He then carefully perused the papers submitted and asked what answer had been made, and was informed that the company had made no reply, but had appointed us as a committee to consult with him before replying to the communication.

After a full discussion of the matter, Mr. Blaine said:

The United States Government, by granting to your company a Congressional charter, practically guaranteed to give you such support as might be necessary for the protection of your rights. This obligation is not expressed in the charter, but exists just the same by implication. In other words, there is a moral obligation on the part of the Government to see that you have fair play. It would be absurd for the Government to incorporate you gentlemen for the purpose of doing a certain thing and then not to see that you are not deprived unjustly of your rights.

Mr. Blaine asked what rights were needed from Costa Rica, and Mr. Menocal showed him a plan of the canal route and pointed out to him how the dam at Ochoa would cause the flooding of the lands of Costa Rica.

After further discussion Mr. Blaine wrote and read to us the following dispatch, which he caused to be sent to Nicaragua, addressed to Minister Mizner:

The United States Government learns with surprise of rumors of an attempt to impair or deprive the Maritime Canal Company of Nicaragua of its rights as embodied in the contract granted by Nicaragua to that company. The United States can not understand how a company chartered under its laws should be treated with injustice by Nicaragua. You will please ascertain whence these disquieting rumors have arisen and communicate with me as soon as possible. You will also leave a copy of this dispatch with the Nicaraguan secretary of foreign affairs. The United States Government can not remain passive when the rights of a corporation organized under its laws is threatened with injustice.

The result was that on the 9th of October Mr. Blaine sent me the following dispatch:

HITCHCOCK, *Fifth Avenue Hotel, New York:*

Mizner telegraphs: "All difficulties settled. Papers executed in triplicate. The Government will retain one."

BLAINE

Mr. Guzman telegraphed the same day:

Mr. HIRAM HITCHCOCK, *New York:*

I sincerely congratulate the company and yourself upon the good news received from Nicaragua.

H. GUZMAN.

The following messages were also sent October 9:

His Excellency PRESIDENT OF NICARAGUA, *Managua:*

Please accept my sincere congratulations upon the happy termination of all differences, and the company's assurance that it will vigorously prosecute the work of the canal in the interest of Nicaragua and the whole commercial world.

HIRAM HITCHCOCK, *President.*

On the 11th of October the following dispatch was received:

President of the Maritime Canal Company of Nicaragua:

I congratulate myself jointly with you upon the happy settlement of the canal question, and with the greatest satisfaction I offer the cordial assistance of my Government to the efforts of the company for the realization of this grand enterprise.

ROBERTO SACAZA,
President of the Republic.

On the 12th of November Mr. Hall, the agent of the company, cabled from Managua as follows:

The Government of Nicaragua has approved plans submitted by Chief Engineer Menocal for the Nicaraguan Canal entrance at San Juan del Norte. They are satisfied perfectly.

The agreement referred to in Mr. Mizner's telegram to Mr. Blaine, as signed in triplicate, was a joint declaration that the company on its part would adhere strictly to the concession, acknowledging the jurisdiction of the Nicaraguan Government over the canal and its ports; and Nicaragua on its part revoked the orders prohibiting formal beginning of canal construction, and approved the plans.

On the 18th of September, 1890, in a conference with Mr. Blaine at Bar Harbor, we went over the entire canal situation, especially considering the articles of noncompliance which would cause a forfeiture of the concession. We agreed that the only remaining cause of forfeiture would be the failure to do work upon the canal to the amount of \$2,000,000 on or before the 8th of October, 1890. I said to him that we had put much more than that into the work, and therefore no question should arise; but from the fact that we had had some misunderstandings with the Nicaraguan Government, I thought that I would take every precaution in the matter.

On the following day Mr. Blaine sent the following dispatch to Mr. Mizner at Central America:

Be at Managua from the 4th until the 10th of October. Witness the settlement of accounts between the Government of Nicaragua and the Nicaraguan Company and protect the rights and interests of this great American enterprise. If any question arises you will act judiciously but firmly for the full protection of such rights and interests.

During the conversation reference was made to the various attacks of the enemies of the canal, referring particularly to the last one, the attempt to repeal our charter, and the admirable adverse report on that attempt which was made by Chairman Baker of the Committee on Commerce of the House of Representatives by the unanimous direction of the committee.

The Nicaraguan Government ascertained that more than \$2,000,000 had been expended on the canal, and that therefore article 47 of the concession had been complied with, and later I received the following letter:

LEGACION DE NICARAGUA,
Washington, December 12, 1890.

MY DEAR SIR: It affords me great pleasure to inform you that I am in receipt of a cablegram from His Excellency the President of Nicaragua, in which he directs me to inform you that article 47 of the concession has been fully and completely complied with.

In conveying this information to you, I desire to congratulate most heartily yourself and the other members of the Maritime Canal Company of Nicaragua for the success which so far has crowned the great enterprise.

I remain, dear sir, very truly, yours,

H. GUZMAN.

MR. HIRAM HITCHCOCK,
President of the Maritime Canal Company of Nicaragua, New York.

As will be seen by article 53 of the concession, this last act in fulfillment of article 47 rendered the concession nonforfeitable.

On the 22d of August, 1893, Minister Guzman received in Managua from the minister of Fomento a full power of attorney giving him authority to settle and compromise with the company ad referendum any and all differences or claims which may arise from the failure of the company to comply with any of the provisions of the concession. Dr. Guzman returned to the United States late in September and was present at a meeting of the board of directors held November 2, 1893. The following is an extract from the minutes of said meeting:

The president asked Dr. Guzman whether, in view of his recent visit to Nicaragua, he had any information to present to the board. In reply, Dr. Guzman said that he wished to assure the company that the relations between the Government of Nicaragua and the company were of the most cordial nature, and that the Government was very desirous to aid the company in its work in every way possible; that his Government had given him full authority with reference to all matters connected with the canal, which authority he had exhibited to the president of the canal company, and he wished to assure the board that he should do everything in his power, both as minister and as member of the board, as well as an individual, to preserve the friendly relations between his Government and the company, and to promote the interests of the canal; and that when he failed to do that, he should insist upon resigning as the representative of his Government and as a member of this board; that he should do everything in his power in Washington this winter to secure cooperation of this Government in construction of the canal; and that if, after a reasonable time, such cooperation should be found not practicable, then he should advocate that his Government, in cooperation with the company, should go abroad for such financial assistance as might be found necessary to carry on the enterprise to completion.

I hereby certify that the foregoing is a correct copy.

THOMAS B. ATKINS,
Secretary and Treasurer.

Made, January 28, 1897.

Since the said meeting of November 2, 1893, Dr. Guzman has repeatedly stated that it was his Government's intention to give the company all the time it needed to recover from the panic of 1893.

Soon after that we received notice of seizures of some of our property at Greytown, which we regarded as illegal, and I went to Washington with the papers bearing on the case and laid the matter before Secretary of State Gresham, and on the 23d of April, 1894, Mr. Gresham cabled Minister Baker at Central America as follows:

It is reported here that property of the Maritime Canal Company has been seized at Greytown as the property of the construction company. Papers exhibited to me indicate that the seizure was unauthorized. You are expected to give the matter your attention and do what you consistently can for the protection of the property and rights of the Canal Company.

On May 10, 1894, I received the following letter:

DEPARTMENT OF STATE,
Washington, May 9, 1894.

DEAR SIR: I have just received a telegram from Minister Baker, saying he can do nothing in the canal matter without the assistance of an able lawyer who understands the Spanish language and practice; that matters are in the worst possible shape; that the canal property has been virtually confiscated and the concession attacked.

Yours, truly,

W. Q. GRESHAM.

HIRAM HITCHCOCK, Esq.,
New York City, N. Y.

On the 26th of April, 1894, I was surprised to receive a copy from Minister Guzman of a letter addressed by Señor Gamez of the Nicaragua cabinet, misdirected to the agent of the Interoceanic Canal Company at Granada April 7, 1894, which was in effect a notification that

Nicaragua regarded the company's concession as forfeited. At the same time some of the company's property was seized at Greytown. The company then sought the protection of the power that created it, the United States, and the then honorable Secretary of State, the late Judge Gresham, reviewed the case, examined the concession, and arrived at the conclusion that there was no existing cause whatever for the forfeiture of the concession, and by his direction the United States minister at Managua cooperated with the general agent of the company, and the Government of Nicaragua withdrew the notice. And on the 2d of July, 1894, I received the following dispatch:

I have just received a telegram from Minister Baker, as follows:
 "Gamez's letter forfeiting canal franchises withdrawn. All serene."

W. Q. GRESHAM.

I also received from Minister Guzman a copy of a cable from President Zelaya to him stating the same thing. On the 3d of January, 1895, Dr. Guzman was present at a meeting of the board of directors of the Maritime Canal Company, and I will read to you the following extract from the records of the meeting on that date:

Mr. Bryan asked for information as to the relations existing between the company and the Government of Nicaragua. Minister Guzman replied that they were of the most cordial nature—never were they so much so as at the present time; that the Government was most anxious to aid the company in the construction of the canal, and was ready to concede whatever might be necessary to insure success.

I hereby certify that the foregoing is a correct copy:

THOS. B. ATKINS,
Secretary and Treasurer.

Made January 28, 1897.

In the summer of 1895 the form of an agreement on the Tipepata Canal question was discussed at Managua between the Government of Nicaragua and the general agent of the Maritime Canal Company, and then the Government sent a special representative, Señor Gamez, with our agent, to New York, where the matter was further discussed and changes were made in the form of agreement. It was also agreed and understood that the question could rest without prejudice to either party for a year.

In the summer of 1896 the special agent came again to New York, with the agent of the company, and on the 28th day of August, 1896, the consideration of the subject was further postponed until May, 1897.

On the 7th of July, 1896, the Hon. Lewis Baker, minister of the United States to Central America, wrote to me the following letter:

MANAGUA, July 7, 1896.

DEAR SIR: Mr. Christanto Medina, of Paris and Central America, remarked to me a few days ago that you and some of your confrères were uneasy lest this Government may take some steps to disturb or cast a shadow over the Maritime Canal concession; and he asked me my opinion as to such a probability.

I answered him promptly and with perfect assurance of the absolute correctness of my statement that the Government of Nicaragua has no intention of doing anything of the kind. Mr. Medina fully agrees with me in this.

To you I will say, the fact is that the movement or threat made prior to the visit of General Macaulay was nothing more nor less than a blackmailing scheme of a shrewd person, but he failed to find an accomplice in the General, and the threat was withdrawn in a legal and an honorable way.

Since that day the company has been in no danger whatever.

Further, I have had the positive assurance, and have had it several times repeated to me by the President, that nothing will be done by this Government to disturb the concession or to alarm its friends who are attempting to raise money for the prosecution of the work.

If both the Maritime Company and the Government of the United States show a desire to have the concession so changed as to permit the Government to build and

control the canal, and therefore desire the time extended sufficiently to enable the latter to complete the work, I have the assurance of the President that such a change and extension would be readily agreed to by the Government of Nicaragua.

The fact is, since the Leon crowd have been completely banished, there is no longer any honest opposition to the canal.

I will say this for the President: Since the reorganization of the Government he is the undisputed master. He "sits at the head of the table." He is unselfishly in favor of the building of the canal by the present company, if it has the means, or by the United States Government.

I have satisfactory reasons for making this statement, and I am assured by Mr. Medina that his information accords with mine, as stated. This gentleman will be in New York soon, he informed me, and will no doubt see you.

No answer is required to this letter. It is written for the sole reason of giving you the assurances that are set forth in it. If they are worth nothing, they cost nothing.

Very truly yours,

LEWIS BAKER.

H. HITCHCOCK, Esq., *New York.*

On the 23d of November, 1896, President Zelaya, of Nicaragua, wrote me as follows:

MANAGUA, November 23, 1896.

DEAR SIR: Your very esteemed letter of the 29th of October last, to which I have the pleasure to refer, reached me in due time.

By the contents of your letter I learn of the efforts made by you and by Mr. Wieser toward the organization of the works to build railroads in the country and also of coining, and which to you appear of feasible realization.

The country is at the present moment in very favorable conditions to undertake such enterprises and offers to immigrants all sorts of guarantees.

I trust that in conformity with your promise, as soon as the electoral campaign be over and confidence restored, you will kindly favor me with favorable reports in regard to the construction of the canal.

Once more I take pleasure in assuring you of my consideration and esteem, and please accept my thanks in the name of this Government for your wishes for the prosperity of the country over which it is my honor to preside.

I remain, respectfully yours,

J. A. ZELAYA.

HIRAM HITCHCOCK, Esq.,

*President the Maritime Canal Company of Nicaragua,
54 and 56 Broad street, New York.*

I was consequently amazed to read in the Congressional Record of January 22d instant the letter addressed by Minister Rodrigues to the Secretary of State, and by him transmitted to the Senate, as follows:

DEPARTMENT OF STATE,
Washington, January 22, 1897.

SIR: In the matter of the various bills now pending in Congress looking to the construction of an interoceanic canal through Nicaragua, I have the honor to inclose herewith for the information of your committee a communication just received by me from the minister of the Greater Republic of Central America at this capital.

Respectfully, yours,

RICHARD OLNEY.

Hon. JOHN SHERMAN,

Chairman Committee on Foreign Relations, United States Senate.

LEGATION OF THE GREATER REPUBLIC OF CENTRAL AMERICA,
Washington, January 15, 1897.

The undersigned, envoy extraordinary and minister plenipotentiary of the Greater Republic of Central America, has the honor to address his excellency the Secretary of State, informing him that as several bills relative to the construction of an interoceanic canal through Nicaragua have been for some time pending before both Houses of the American Congress, his Government recently instructed him to examine them, and to make, under certain conditions, suitable representations to his excellency the Secretary of State.

The undersigned has consequently examined said bills, which are five in number, to wit:

Three introduced in the House of Representatives—one by Mr. Mahon, December

3. 1895: another by Mr. Doolittle; and the third by Mr. Barham, both the latter having been introduced December 6, 1895.

Two introduced in the Senate, one by Mr. Perkins, December 30, 1895, and the other by Mr. Morgan, June 1, 1896.

All these bills take it for granted, with minor differences of detail, that the American Government is to take an important part in the enterprise, and that it is to furnish the money necessary for the construction of the canal by the Maritime Canal Company of Nicaragua, whose constitution and organization they essentially modify.

Unfortunately, the undersigned observes that the provisions of these bills are at variance, both generally and in matters of detail, with the stipulations of the contract of April 24, 1887, between Nicaragua and the company aforesaid, from which contract the company derives its existence and which is the basis of its enterprise.

That contract stipulates, in its eighth article, that the concession therein provided for shall in no case be transferable to governments or to foreign public powers, and Article LIII provides that any contravention of this stipulation shall entail a forfeiture of the contract. As it can not be denied that the bills to which the undersigned has reference—although they do not expressly say so—effect that transfer most fully, making the Government of the United States of America the absolute owner of the enterprise and of the canal and its rights, the result to which they inevitably conduce is the forfeiture of the contract.

Article XLVII of that instrument provides that the company shall undertake, at its own expense, the final surveys of the ground and the location of the line of the canal by a commission of competent engineers, two of whom are to be appointed by the Government of Nicaragua, and the aforesaid Article LIII provides that a failure to comply with this stipulation shall entail the forfeiture of the concession. The bills, however, provide that the canal shall be constructed under the surveillance of the Department of Engineers of the Army of the United States of America, and according to its plans; and that three engineers shall be designated by the President for that purpose, who shall make the explorations and estimates. This provision likewise conduces to the forfeiture of the contract.

"The people of all nations shall be invited to contribute the necessary capital to the enterprise."

"Of the capital with which the company shall organize, and which it proposes to distribute among the different countries interested in the enterprise, there shall be reserved at least five (5) per cent for the Central American Government and citizens that may desire to subscribe." These provisions of Article VII of the contract are antagonized by the bills, which distribute the capital of the enterprise among the United States of America, Nicaragua, Costa Rica, and the company.

"The capital stock of the final company shall be composed of shares, bonds, or obligations of any other kind, in such proportion as it may deem convenient." This is another provision of the ninth article. The bills, however, fix the amount of the capital stock in shares, of which they dispose in such a way that they are of no use for the work of the enterprise, as they ought to be according to the intent of the contract. For the work of the enterprise the bills create bonds, which must thus be converted into capital stock or be left out of the contract. The undersigned need not here point out the infractions which the bills involve.

According to Article X of the contract, the board of directors is to be composed of persons at least one-half of whom shall be chosen—by the company, of course—from the promoters who may yet preserve their quality as such. The bills organize the board of directors with 11 members, 8 of whom are to be appointed by the President of the United States, in different capacities, 1 by Nicaragua, 1 by Costa Rica, and 1 by the Canal Company. The difference between this provision and the stipulation referred to could not be more marked than it is.

Among the benefits which Nicaragua reserves to herself, in consideration of the valuable privileges and rights which she surrenders, is 6 per cent of the shares, bonds, certificates, or such other obligations as the company may issue with a view to raising the capital. Now, notwithstanding the fact that the company has made several issues, it has not fulfilled this obligation; and as the bills say nothing on this particular point of shares, bonds, certificates, or other obligations which were to be issued and have not been issued in favor of Nicaragua, these securities would probably either be lost in the new form of the enterprise, or would be liable to troublesome and tedious litigation.

Two of the bills in question have already been reported by a committee, so that they may finally exclude the others; nothing, however, is established in them with regard to the shares that would belong to Nicaragua; and it might happen, owing to this, that Nicaragua would get none at all.

If the company were to issue a hundred or a hundred and fifty million dollars' worth of bonds in order to meet the cost of the work, which bonds, as I have already remarked, would have to be considered as capital or be left out of the contract, Nicaragua would be entitled to her 6 per cent in virtue of the stipulation above

referred to; but the bills leave no door open to such a possibility, nor do they allow her any participation in the issue which is to be made in order to pay for the work already done.

The company, by article 14 of the aforesaid contract, has contracted the solemn obligation to construct, at its own expense, within the term of three years, reckoned from the commencement of the work upon the interoceanic canal, a navigable canal between Lake Managua and the navigable part of the Tipitapa River, near Pasquier, of sufficient dimensions to admit of the free passage of vessels drawing 6 feet and of 150 feet in length. That term expired a long time ago, but the company, notwithstanding the most earnest solicitation, has made no pretense of meeting that obligation, or of definitely adjusting the compensation which it ought to pay in order to be discharged therefrom. The bills establish nothing on this other point, and Nicaragua's rights in this matter might thus be annulled in consequence of their silence.

By the plan involved in the new form which the bills devise for the enterprise, the present company is extinguished, and nothing remains of it, in its relations with the enterprise, save the shadow of a personality represented by a vote in a board of directors of eleven members; while in its relations with Nicaragua it may always claim full personality as the holder of the concession, although having none of the means necessary to enable it to meet its obligations.

Finally, it is to be observed that, while the bills contravene and set at naught stipulations of the contract, they do not state whether the remaining ones still remain in force or not, although among these latter there are very many which are of no great importance to Nicaragua in particular, and to Central America in general.

The undersigned is convinced of the good faith of the gentlemen who have introduced these bills in both Houses, and of those who advocate their passage. He takes, moreover, pleasure in stating that he recognizes these efforts as the result of the legitimate interest which they feel in behalf of the construction of an interoceanic canal, in which the confederation that he represents is quite as deeply interested. And, in calling attention to the serious objections enumerated, which would render these efforts nugatory, the only object that he has in view is to protect just rights, which he thinks are menaced by the bills aforesaid.

It seems evident that the company is unable to raise money to fulfill its contract unless the United States of America furnish it therewith, and since that contract excludes the possibility of attaining that result, the undersigned, having been duly authorized to do so, proposes to his excellency the Secretary of State that the two Governments—relying upon the favorable disposition of the Government of the United States of America—shall come to a direct understanding on the subject, on the basis of the Zavala-Frelinghuysen treaty, with such modifications as may be agreed upon, and endeavoring to reach a just arrangement with the Maritime Canal Company of Nicaragua, so that it may renounce a concession whose conditions it is unable to fulfill.

The undersigned, in thus obeying the instructions of his Government, avails himself of this occasion to reiterate to his excellency Secretary Olney the assurances of his most distinguished consideration.

J. D. RODRIGUEZ.

His Excellency RICHARD OLNEY,
Secretary of State of the United States, etc., Washington, D. C.

I replied to this letter on January 23 as follows:

THE MARITIME CANAL COMPANY OF NICARAGUA,
New York, January 23, 1897.

DEAR SIR: My attention has been called to the Congressional Record of January 22, containing a copy of a letter addressed by the minister of the Greater Republic of Central America at Washington to you, and transmitted by you to the Senate, in which the minister reflects upon the Maritime Canal Company of Nicaragua, a company chartered by the United States, and which company, in compliance with a provision of said charter, reports annually its transactions to the Government of the United States, through the Department of the Interior, and which holds concessions from the Governments of Nicaragua and Costa Rica, under which the construction of the Nicaragua Canal has been commenced and is to be completed.

It therefore becomes my duty to briefly call your attention to some of the statements contained in the minister's letter, and to note some omissions. Referring to certain bills before the Congress of the United States, he says that "the bills, however, provide that the canal shall be constructed under the surveillance of the Department of Engineers of the Army of the United States of America and according to its plans;" and adds, "this provision likewise conduces to the forfeiture of the contract." But he omits to inform you that the final surveys and the location of the line of the canal were made and concluded by a commission of engineers, in strict conformity with Article XLVII of the concession, and were formally accepted by the Government of Nicaragua on the 8th day of October, 1889.

He quoted from Article IX of the concession, "the people of all nations shall be invited to contribute the necessary capital to the enterprise," but omits the remainder of the sentence, namely, "and it shall be sufficient for the fulfillment of this requirement to publish an advertisement for thirty consecutive days in one of the principal daily papers of each of the cities, New York, London, and Paris." He quotes further, "there shall be reserved at least 5 per cent for the Central American Governments and citizens that may desire to subscribe," but he omits to inform you that soon after its organization the company fully performed all these conditions of Article IX in the manner required therein.

Referring to the 6 per cent of shares that the concession obligates the company to issue to Nicaragua, the minister says the "company has not fulfilled its obligations." The fact is that the company issued this stock to Nicaragua on the 31st day of October, 1890, and notified that Government that the certificate was at its disposal, but the Government has not yet appointed an agent to receive the same as provided in Article L of the concession.

The minister states that the company has failed to meet its obligations to construct the Tipitapa Canal under the terms of Article XIV of the concession. As to this, I will say that the surveys for the canal as described in Article XIV were made, and then the Government of Nicaragua asked for a deeper canal than the concessions provided for. Before a resurvey was completed a desire was expressed for a still deeper canal. Pending negotiations on this subject, and notwithstanding the fact that the Government had failed to place at the disposal of the company the lands required for the line of the canal, the Government issued a notice to the effect that it considered the canal concession forfeited. The company then sought the protection of the power that created it—the United States—and the then honorable Secretary of State, the late Judge Gresham, reviewed the case, examined the concession, and arrived at the conclusion that there was no existing cause whatever of forfeiture of the concession, and by his direction the United States minister at Managua cooperated with the general agent of the company, and the Government of Nicaragua withdrew the notice. Whether the Tipitapa Canal will be constructed and of what dimensions, or whether compensation will be made in lieu thereof, are matters still under negotiation, and any differences that may arise in the consideration thereof are not causes of forfeiture, but are to be settled by arbitration under Article LV of the concession.

While the honorable minister may not have intended any injustice to the company by his letter, yet he must be supposed to have made a careful study of the canal question, the concessions and the operations under them, and if so his letter seems inexplicable.

It would appear from his letter that a contemplation of possible Congressional action in amending the charter of the Maritime Canal Company has interposed itself between him and the true relations existing between the Government of Nicaragua and Costa Rica and this company under the concessions.

In this connection it is pertinent to say that in an interview with the honorable minister since his arrival from Central America I alluded to the bills before Congress, and stated to him in substance that they were generally believed to be the result of a strong desire on the part of Congress to hasten the construction of this vitally important connection with the coast lines of this continent; and I added that whatever the outcome might be, the Maritime Canal Company could accept of no measure that would be unjust to the powers from whom it received the concessions.

This letter of the minister is an attack upon the integrity of the Maritime Canal Company and its concessions, and on behalf of that company I ask the protection and aid of the Government of the United States in the defense and maintenance of its concessionary rights and its property.

Very respectfully,

HIRAM HITCHCOCK.

President of the Maritime Canal Company of Nicaragua.

HON. RICHARD OLNEY,
Secretary of State.

The CHAIRMAN. Now, Mr. Hitchcock, do you know in what manner the passage of the bill by the Senate in January, 1895, was received by the minister of Nicaragua, then resident at this capital, and what expression he gave as to the happiness of the people and Government of Nicaragua over the passage of that bill, if any?

Mr. HITCHCOCK. In reply, I will say that on the last day of January, 1895, I received the following letter from Minister Guzman:

WASHINGTON, January 30, 1895.

DEAR MR. HITCHCOCK: I was sorry you could not be here the day our bill passed the Senate, but I saw by your telegram that you were detained by a sad loss in your family.

I should have written you before this about the great victory, had I not been sick. I was taken with a bad attack of quinsy, and I only left my bed yesterday.

Please accept my congratulations for the success of the bill, and let me hear, as soon as possible, about your future plans. I am sure that my cablegram announcing the victory was received with joy in Nicaragua.

Very sincerely, yours,

H. GUZMAN.

Later I received a letter from the Hon. Lewis Baker, minister to Central America from the United States, written from San Jose, Costa Rica, on the 28th of January, 1895, saying:

I have a telegram from the general minister of Nicaragua this morning, informing me that the canal guarantee bill had passed the Senate. If this good news is confirmed I shall fully expect the bill to pass the House. If this proves true won't you do me the favor to cable me promptly, giving me the facts? On the statement of the Nicaragua minister I have sent congratulatory messages to both the Nicaraguan and Costa Rican Governments.

The CHAIRMAN. From the fact that you had made a full statement of all of your troubles with Nicaragua, if I may call them troubles, and that the Government of Nicaragua had expressed itself as being fully satisfied that all the terms of the concession had been complied with, and after receiving this letter from Mr. Baker, which you have just quoted, and after receiving the letter which is above set out from President Zelaya, and after receiving the letter from Mr. Guzman, which you have just quoted, did you have any suspicion or expectation that there was any real remaining difficulty or difference between your company and the Government of Nicaragua?

Mr. HITCHCOCK. I had not, except that the Tipitapa question was a matter that we were arranging for arbitration, if necessary.

The CHAIRMAN. And that matter had been postponed for that purpose?

Mr. HITCHCOCK. That question had been postponed.

The CHAIRMAN. The Tipitapa Canal had no connection whatever with a right of forfeiture on the part of Nicaragua of the concession, and if there was any possible default on the part of the company, which I understand you to deny, the arrangement or settlement of that matter was entirely apart from your right to go on and build the main canal?

Mr. HITCHCOCK. Entirely apart.

The CHAIRMAN. Are you yet convinced, notwithstanding the protest of the minister from the Greater Republic of Central America, that Nicaragua is friendly to your company and desires to see the canal succeed?

Mr. HITCHCOCK. My belief is that President Zelaya and his present administration in Nicaragua are very friendly to the company and exceedingly desirous to have the canal completed, and I believe them to be desirous that the company shall be aided by the United States, in order that the completion may be hastened.

The CHAIRMAN. Is there not a remaining jealousy or antagonism between Nicaragua and Costa Rica, growing out of old disputes, which has not been entirely quieted, and with which you have no concern, and may not that jealousy be at the bottom of the movement of the Greater Republic of Central America?

Mr. HITCHCOCK. That is quite possible and may be more than that. It may be highly probable, but the company has but one object, and that is to carry out both its concessions from those Governments in the utmost good faith under the charter granted by the United States.

The CHAIRMAN. Has not your company put itself to a great deal of trouble, inconvenience, and expense in the effort to reconcile those two

Governments with each other upon the subject of the construction of this canal?

Mr. HITCHCOCK. We have done our best in that direction frequently for the last ten years, as will be shown by what I have already stated before the committee.

The CHAIRMAN. It has been asserted that your company is bankrupt. Is that true?

Mr. HITCHCOCK. That is not true. The Maritime Canal Company of Nicaragua is and always has been entirely solvent and has no outstanding debts we are not able to meet. Anyone making a different statement confuses the Maritime Canal Company with the Construction Company, which held a contract with the Maritime Canal Company to construct the canal and which was obliged to suspend and go into liquidation in 1893. This latter fact is not surprising, when it is remembered that during that period of great financial depression such vast corporations as the Erie Railroad, the Baltimore and Ohio, the Reading, and the Union Pacific were obliged to default on their obligations and to resort to reorganization of their companies.

HIRAM HITCHCOCK.

R E P O R T

OF

THE POSTMASTER-GENERAL.

POST-OFFICE DEPARTMENT,
Washington, D. C., November 21, 1898.

To the PRESIDENT:

The rapid and amazing growth of the postal business in all its branches is its most striking feature. In 1880 the gross revenue of the Department was \$33,315,479 and the gross expenditure was \$36,542,804; the number of post-offices was 43,000, and the total number of postage stamps, stamped envelopes and wrappers, and postal cards issued was 1,367,397,047. In the fiscal year 1898 the gross revenue was \$89,012,618 and the gross expenditure was \$98,033,523; the number of post-offices was 73,000, and the total issue of postage stamps, stamped envelopes and wrappers, and postal cards was 4,614,526,090. Within this period our population has increased about 50 per cent, while the volume of postal business has multiplied nearly threefold. The lesson of improved facilities, more enlightened methods, and advancing activity is plain.

The financial operations of the Department for the last fiscal year are briefly shown in the following statement:

REVENUE AND EXPENDITURES.

Ordinary postal revenue.....	\$87, 815, 985. 20
Receipts from money-order business	1, 196, 633. 35
	<hr/>
Total receipts from all sources	89, 012, 618. 55
Total expenditure for the year	98, 033, 523. 61
	<hr/>
Excess of expenditures over receipts.....	9, 020, 905. 06

An analysis of the above statement in comparison with previous statements shows that the postal service during the year has been economically administered, the general increase of expenditure being but little more than that of the preceding year, notwithstanding the fact that nearly a million dollars, earned in the transportation of the mails

Economical ad-
 ministration
 shown.

by what are known as the “aided Pacific Railroad companies,” was paid during the year directly out of the Department’s appropriations, while last year and in previous years the earnings of those railroads were not counted as expenditures, but were simply certified to the Secretary of the Treasury, under the requirement of the law, as credits in favor of the companies in their bonded account with the Government.

The total receipts, 1898, were.....	\$89, 012, 618. 55
The total receipts, 1897, were.....	82, 665, 462. 73
	<hr/>
Increase of receipts, 1898	6, 347, 155. 82

Improvement
in business condi-
tions indicated.

It will be seen from the above figures that there was an increase during the year in postal receipts of nearly six and a half million dollars over the aggregate of 1897, or over 7.6 per cent—an indication, if any such proof were now needed, that the country is again in the enjoyment of prosperity. So marked are the improved business conditions that this rate of increase is greater by more than 2½ per cent than the estimate of my predecessor.

Total expenditures, 1898.....	\$98, 033, 523. 61
Total expenditures, 1897.....	94, 077, 242. 38
	<hr/>
Increase of expenditures, 1898	3, 956, 281. 23

The general rate of increase for the fiscal year over that of 1897 was 4.2 per cent, or, excluding from the statement of expenditures nearly a million dollars paid, as already described, for transportation of mails over aided Pacific railroads, which last year did not enter into the computation of expenses, the ratio of increase for the year 1898 was but 3.1 per cent, which is seven-tenths of 1 per cent less than the rate of increase for 1897.

I submit below an estimate of the revenues and expenditures, which has been transmitted to the Secretary of the Treasury, for the fiscal year ending June 30, 1900:

Estimate for
1900.

Total postal revenue for 1898.....	\$89, 012, 618. 55
Add 7 per cent.....	6, 230, 883. 29
	<hr/>
Estimated revenue for 1899	95, 243, 501. 84
Add 6 per cent.....	5, 714, 610. 11
	<hr/>
Total estimated revenue for 1900	100, 958, 111. 95
Estimated expenditures for 1900.....	105, 224, 000. 00
	<hr/>
Deficiency for 1900, estimated.....	4, 265, 888. 05

But for the gross abuse of the privilege given by law to second-class matter, the deficit would long ago have disappeared, and its present and promised decrease comes in the face of this continued abuse. The statistics do not

show as great an increase in the volume of such mail during the last fiscal year over that of the previous year as has been annually shown for the past eight or ten years; but the rate of increase is still much greater than that of other postal business, a fact that gives continued force to the reflections made by several of my predecessors upon the flagrant wrongs in connection with this subject and to the urgent appeal for their correction. The effort for amendment which has been made would in no way interfere with legitimate publications, and would only relieve the Department from the burden of carrying at a merely nominal rate some classes of so-called periodical publications which, in the original framing of the law, were never intended to be included within the scope of this privilege.

Abuses of second-class rates continued.

MILITARY POSTAL SERVICE.

The war with Spain entailed the necessity of a military postal service, and imposed new, immediate, and imperative duties on the Department. The rapid organization and mobilization of an army of a quarter of a million men required prompt measures for the effective handling of the mails connected with so great a body. The camps of concentration necessitated the sudden creation of large offices; the exigencies of constant changes and movements were met, and the military and naval forces on active service in distant fields in the West Indies and the Philippines were accompanied by the mails, which maintained communication with home.

At each of the camps, commencing with Camp Black, New York, May 4, a military post-office was established and clothed with all the powers of a regular post-office, including the issue and payment of money orders and the registration of letters. In some of the larger camps the volume of postal business sprang up within a few days to the level of that of cities of high rank. This sudden access demanded quick and intelligent management. Trained post-office and railway mail clerks were detailed from available points for this service. Where the facilities near or within the camps were inadequate, railway mail cars were procured, stationed at convenient points on side tracks, and used as post-offices. It was found expedient in most cases to constitute the camp post-office a branch of some city office as the simplest method of providing bonded officials and postal supplies.

Post-offices at military camps made stations of city offices.

Prior to the 1st of July the expenditure thus incurred was defrayed, so far as it could properly be done, out of

Appropriation
insufficient.

the appropriations for the general service of the Department, and at some of the camps distant from cities a temporary rural free-delivery service was put in operation. Congress had, however, passed an act empowering the Postmaster-General to establish military post-offices, and with the commencement of the present fiscal year, on July 1, a special appropriation of \$50,000 for military postal service became available. It is obvious now that with the necessities growing out of the extension of the service this very moderate sum was not sufficient for the requirements of the year. Indeed, with the exigencies which followed our campaigns on remote soil, the appropriation has already been exhausted. A detailed statement of the expenditures appears in the appendix.

Postal service
inaugurated in
Cuba on landing
of army.

When our troops advanced into Cuba the postal service moved with them. Upon the surrender of Santiago de Cuba the postal agent of the United States, under the authority of the President and in cooperation with the military commander, took possession of the post-office of that city, which was made the military post-office. He dispensed with the services of the Spanish director and ten of his large force of clerks, retaining such as were needed as interpreters, and proceeded with a much smaller force to put the office on a better and more effective footing.

The service has been greatly improved, and at the present time there are four deliveries daily in the business portion of Santiago city, and regular mail communication has been established with Havana and intermediate seaports and with Jamaica and other islands in the West Indies. The service has likewise been somewhat extended into the province of Santiago. During the continuance of hostilities mail communication between Santiago and the United States was necessarily irregular, inasmuch as the Post-Office Department was dependent wholly on the voluntary service of army transport ships and vessels belonging to the navy, and their movements were governed entirely by army and navy requirements.

Condition of
service in Porto
Rico.

The postal service accompanied our arms and our flag to Porto Rico. Beginning at Ponce, it was extended as rapidly as our troops possessed themselves of different places, until there are now in the island twelve military postal stations, having postal connection with many smaller places. They are under the direction of a superintendent detailed from the Railway Mail Service of the United States, who acts in conjunction with the military commander, with a force of six railway mail clerks, three postal agents, and thirty-two clerks, including four Spanish translators.

In the Philippines two military postal stations have been established, at Manila and Cavite, which are under the supervision of an experienced division superintendent detailed from San Francisco, and are conducted by a force of railway mail and post-office clerks and agents, with the assistance of details from the army of occupation. Service in the Philippines.

When Porto Rico and portions of Cuba and the Philippines passed into the military possession of the United States, measures for the continuance or restoration of general mail facilities seemed to be an essential element of the beneficent presence of American authority. By order of the President, the establishment of the postal service followed the extension of military occupation. In harmony with the general policy adopted for the administration of the civil institutions in the regions which thus came under our control, the local system and provisions were retained as far as practicable and adapted to our methods.

At the same time it was constantly borne in mind that these measures were taken by virtue of military possession. The general postal service was associated with the military postal service and operated by the same machinery. No new appointments, save in one or two instances, were made. Trained men from our home service were detailed as superintendents and agents and placed in charge of the larger offices, retaining such of the old employees as were needed or could be made available. In the smaller places the old postmasters are continued or other local officers are found. There has already been a great improvement over the old Spanish service, and the work has only just begun. All steps taken by virtue of military possession.

Copies are given in the appendix of the act authorizing the establishment of post-offices at military posts or camps, of the President's order authorizing the extension of the military postal service over territory within the possession of our armies, and of a detailed statement of the plan for handling the mails in connection with the military post-offices.

The self-sacrificing devotion to duty exhibited by the representatives of the Post-Office Department in facing the risks of a perilous and distant service deserves full recognition. One of the earliest and most pathetic of the losses which followed the American advance in Cuba was that of Mr. Eben Brewer, of Pennsylvania, our first postal agent in that island. He addressed himself to his special work with the utmost energy and enthusiasm, all the more resolute because of the difficulties and obstacles encountered at the outset of the campaign, when unavoidably there was Heroic service of our first postal agent in Cuba.

a lack of adequate equipment and organization. He personally took the mail to the fighting line, and, not content with fulfilling his immediate duty, he rendered heroic service when the battle raged in caring for the wounded and giving his labors unreservedly in the field hospital. His post was amid the lurking dangers of Siboney, and there he contracted fever of which he died, giving his life for his country as truly as the soldier who falls on the field of battle. Mr. Brewer's death has been followed from like cause by that of Mr. Walter Spicer, a post-office clerk from Boston, and a large number of other postal employees have been in hospital, prostrated by the fevers incident to the climate.

AUXILIARY CRUISERS AND MERCHANT MARINE.

Splendid service of converted ocean mail steamships.

The great value of the aid contributed during the war with Spain by the steamships employed in the mail service of the United States under the act of March 3, 1891, and converted under the terms of that act into auxiliary cruisers, is universally recognized. The *St. Louis* and the *St. Paul*, which became a part of our effective fighting force under their own names, and the *New York* and *Paris*, which were rechristened the *Harvard* and *Yale*, added very materially to the strength of the navy and rendered a special and distinct service for which they were unequalled. Their superior speed peculiarly fitted them to act as scouts, and in actual encounter they proved their fighting efficiency. Independent of their value as fast mail steamers, the part they played in our naval operations vindicated the broad policy of the law under which they floated our flag.

Swift mail steamships a bulwark to the Navy.

That law was expressly intended to facilitate the ocean mail service and to promote commerce. Associated with that object was the design of reenforcing the navy and furnishing quick and available means of offense and defense in time of war. Our recent experience has illustrated and emphasized the importance of this resource, and has demonstrated that one of the most effective and economical bulwarks of naval power is the possession of swift mail steamers, capable of immediate conversion into armed cruisers. In the further development of our naval force this factor can not fail to receive consideration, and it supplements and strengthens the reasons for governmental action which are found in the wisdom of promoting the upbuilding of a merchant marine. The advancement of our commerce requires that we shall have carrying facili-

ties. A commercial marine is not only vital to commercial expansion, but it provides the best source for the expansion of the naval force which becomes necessary in time of war. From every point of view it is thus a legitimate object of governmental concern, and the adoption of practical and reasonable measures within our power for the promotion of this object seems to be dictated by every consideration of public interest.

The act of 1891 invested the Postmaster-General with authority to enter into such contracts for the carrying of mails on American steamships as in his judgment will best subserve and promote the postal and commercial interests of the United States. The first fruits of this act were the powerful steamers which, converted into armed cruisers, rendered such useful service in the war with Spain. They were employed in carrying the mails across the Atlantic and compare favorably with the Atlantic steamers under any flag. But the act further provided that the mail service on lines thus created should be equitably distributed among the Atlantic, Mexican Gulf, and Pacific ports. In accordance with this provision, lines have been established to ports in the Gulf of Mexico, and steamers recently launched for this service, and just now undergoing inspection by a naval officer, will be available as cruisers should they be needed in a future emergency. But no lines have thus far been established under this act on the Pacific, and the requirement of an equitable distribution, which enjoins attention in that direction, is enforced and accentuated by the recent expansion of American interests on that ocean. Should steps be taken to extend our flag over American steamships on the Pacific, as it has been moderately extended on the Atlantic, such action will not only comply with the spirit and purpose of the existing law, but it will naturally follow and utilize the opening of American opportunity in that quarter.

Consideration
of further lines.

HAWAII.

The acquisition of Hawaii has not thus far been followed by any change in our postal relations with that country. The absorption of its postal system into our own and the exercise of our control, like the incorporation of other features of its local administration, have awaited the report of the Congressional committee and the legislation which will follow. There was the more reason for observing this obligation, as Hawaii already has a good mail service which is more than self-sustaining.

RURAL FREE DELIVERY.

The initial appropriation of \$50,000 made available for a test of this service was increased for the present fiscal year to the amount of \$150,000. Rural free delivery has been enlarged in accordance with the greater appropriation provided, but not yet to the full extent authorized. There has been a desire to put the service into operation in as many States as possible and to elicit the fullest expression of public opinion on the subject. In some of the States where this experimental service has not yet been fully tested, notably in the South, the prevalence of quarantine restrictions and other impediments has debarred action.

Popular demand for continuance of service expressed.

Letters have been addressed by the First Assistant Postmaster-General to every postmaster within whose jurisdiction rural free delivery has been put in force, and also to representative citizens within the range of the delivery, asking an expression of their views. Their replies indicate such a general desire for the continuance and extension of the service as can not fail to receive the earnest consideration of Congress. The wish that finds most general expression in these communications is that some assurance should be given of the permanence of the service. It is asserted that if this were done existing crudities and isolated cases of lack of appreciation would disappear and that rural free delivery would demonstrate its capacity for becoming a self-supporting branch of postal administration.

It is claimed that the local opposition that occasionally manifests itself to the abolition of fourth-class post-offices, which could be superseded by rural free delivery with great advantage to the public service, would then disappear, and thus one obstacle to the economical establishment of the service would be removed. Examination of the detailed replies received indicates that the least encouraging results have been arrived at in rural free delivery routes started prior to 1897. A revision and rearrangement of the earlier established service is in contemplation.

FREE DELIVERY.

Larger appropriation needed.

The extension of free delivery in the cities of the United States during the year has been limited only by the amount appropriated for this purpose. Fifty-nine offices which had not previously enjoyed the benefits of this service have been brought within the free-delivery classification. This has required the appointment of 215 letter carriers, at a cost of \$87,000. Congress provided \$90,000

for new free-delivery service. The proper maintenance and extension of free delivery in offices previously established has necessitated the appointment of 424 carriers. There yet remain 110 offices entitled under the law, by reason of \$10,000 gross receipts per annum or 10,000 population, to the free delivery service, whose claims could not be allowed without creating a deficiency.

THE EIGHT-HOUR LAW.

Experience has shown that the act passed May 24, 1888, limiting the work of letter carriers to eight hours a day, can not be practically applied, in its present form, to meet the varying conditions of the postal service without causing loss of time to the Government and personal inconvenience to the carriers. As interpreted by the Supreme Court, the law entitles a letter carrier to eight hours work a day and to his pay for eight hours, even though his work on any particular day should not be sufficient to occupy him for that length of time. For any excess of service over eight hours in any one day he is entitled to extra pay. Ruling of Supreme Court.

In order to avoid the making of overtime, under which head liabilities to the amount of several millions of dollars were unwittingly incurred before the law received the interpretation of the Supreme Court, the Department has issued and enforced most stringent regulations. It has been compelled to base its time schedules on the work of heavy days, so that it loses from thirty minutes to an hour on each carrier on the three or four light days in the week, and imposes upon them on the heavy days an amount of work and a rate of speed which severely tax their endurance. It has also been compelled, in offices where the principal mails are received early and late in the day, to provide long "swings" or intervals between trips, thus stretching the work of the carriers over a range of sixteen or eighteen hours a day. Hardships necessarily imposed on carriers.

It is suggested that these inconveniences and hardships could be avoided by a change of the law so as to authorize postmasters to apportion the number of hours for each day as the requirements of the service demand, not to exceed a total of forty-eight hours for the six working days of the week, with such additional time on Sunday (not to exceed eight hours) as the exigencies of the service may require. Remedy suggested.

CONSOLIDATION OF POST-OFFICES.

The desirability of the repeal of the proviso attached to the bill making appropriations for the postal service of the

Repeal of restrictive provisions urged.

United States, passed at the close of the first session of the Fifty-fourth Congress, which enacts that no post-office established at any county seat shall be discontinued by reason of any consolidation of post-offices made by the Postmaster-General, is once more respectfully urged upon the attention of Congress. Instances are numerous where free delivery could be extended over territory not heretofore favored, at a great saving to the Government and an increase of efficiency to the service, provided freedom of consolidation were allowed and the salaries of postmasters at offices consolidated were made available for the employment of superintendents and clerks at stations established in place of the consolidated offices.

CLASSIFICATION OF CLERKS.

Legislation recommended.

The existing law, providing for the classification of clerks in first and second class post-offices, as embodied in section 451 of Postal Laws and Regulations, is found to be ambiguous and defective. A bill (H. R. 4582) was introduced at the last session of Congress to remedy these defects, and to give a proper designation and a specific salary to each employee. It is believed that the passage of this bill would encourage many intelligent and competent clerks to remain in the classified post-office service who now, disheartened by the low salaries and the difficulties of advancement, continue in office only long enough to enable them to secure more lucrative positions in other vocations.

It is also suggested that the Department should have authority to make an allowance for clerk hire, without regard to the class of the office, at any post-office where it is satisfactorily shown that the postmaster, by devoting his entire time to the duties, can not satisfactorily meet the public demands.

PAY FOR SUBSTITUTE CLERKS.

Appropriation should be granted.

For lack of a specific appropriation for the pay of substitute clerks in post-offices during vacations of the regular force, some hardship has been experienced, the clerks in many instances being obliged either to forego the fifteen days annual leave granted by law or to impose upon their associate clerks unreasonable hours of labor. I indorse the recommendation of the First Assistant Postmaster-General that an appropriation of \$75,000 be made to provide substitute clerks in first and second class post-offices during vacation time. It would seem to be fair that the

clerks should be placed on an equal footing with the letter carriers in this respect.

INCREASE OF MONEY-ORDER BUSINESS.

During the year there were 28,753,412 money orders issued, having a face value of \$204,593,890.90. These figures show the phenomenal increase of 2,640,000 in the number of money orders issued during the last fiscal year, and an increase of more than \$16,000,000 in the total amount of money carried by this service over last year, and indicate the return of commercial activity and business prosperity. Since the foundation of the money-order system in the United States, in 1865, there has never before been so marked an advance in the amount of business transacted in one year over the year immediately preceding.

Increase of money-order business unprecedented.

THE MAIL-TRANSPORTATION SERVICE.

Statistics given in the report of the Second Assistant Postmaster-General show that at the close of the last fiscal year the total number of inland mail routes was 33,795, having a length of 480,461 miles, and resulting in an annual travel of 434,332,691 miles. This is an increase of 1,304 in the number of routes, of 10,429 miles in the length of routes, and of 13,482,212 miles in annual travel. This result was obtained with an increase in the annual rate of expenditure of only \$1,534,700.

Length of inland mail routes.

At the close of the last fiscal year the mails were being carried over 174,777 miles of railroad, on which the annual travel was 281,585,612 miles, at an annual rate of expenditure for transportation of \$30,786,375.89.

Mail service, by means of electric and cable cars, was increased during the fiscal year by 59 routes, 518 miles in length, and 1,050,629 miles in annual travel.

The star service, which supplies those towns and villages remote from lines of railroads and steamboats, was increased to the extent of 2,982,620 miles of annual travel, although the annual rate of expenditure was reduced by \$53,311.93. The advertisement now pending, looking to the reletting of the routes in the middle West, contemplates an increase of 1,557,709 miles, or nearly 6 per cent in the annual travel in that section. The reletting of the service last year in most of the States west of the Mississippi River resulted in a reduction of \$348,992.87 per annum, with an increase in annual travel of nearly 7 per cent.

Star service statistics.

I trust that some legislation may be had at the next session of Congress to correct evils growing out of the existing system of speculative bidding for star-route service.

Legislation needed to correct abuses.

ALASKAN MAIL SERVICE.

Contracts have been made for two routes over 2,500 miles in length from Juneau, Alaska, to St. Michaels, Alaska, via Dawson City, Circle, Weare, and other points on the Yukon River. These contracts contemplate, for the first time, winter mail service for next season through that part of Alaska from Circle to St. Michaels.

STEAMBOAT AND MAIL MESSENGER SERVICE.

Increases were made in the steamboat service aggregating 2,614 miles in length, 229,908 miles in annual travel, and \$26,133.17 in annual rate of expenditure.

In the mail messenger service there was a decrease of 98,477 miles in annual travel and of \$38,898.88 per annum in cost.

On June 30, 1898, there were 206 wagon routes in cities, costing \$734,643.91 per annum, an increase over the previous year of 35 routes and \$30,767.91.

PNEUMATIC TUBES.

During the last fiscal year four lines of pneumatic tubes were put into operation, two in New York, one in Boston, and one in Philadelphia. Since then the tube between New York and Brooklyn has been opened. These, with the first tube that was started in 1893, in Philadelphia, make six lines now in use carrying the mail.

These new lines having been started at different dates throughout the last fiscal year, the amount expended was but \$85,379.50. The annual rate, however, at the present time is \$222,266.

The practical use of these tubes has demonstrated their value, when properly utilized, for the expeditious handling of mail in crowded centers, and particularly of letters and other small matter for which rapid transit is essential. The best results from the use of pneumatic tubes can not be obtained until some particular city shall have a more complete system, connecting the main office with the important branch offices as well as with the several railroad stations.

Value of pneu-
matic tubes
proved.

RAILWAY MAIL SERVICE.

On June 30, 1898, there were 1,268 lines of traveling post-offices (railway, steamboat, and electric and cable cars), covering 167,755 miles in length; the number of clerks employed was 8,074; the annual travel by them in crews was 187,483,187 miles; adding to this the closed-pouch

and express-pouch service, the total number of miles traveled was 285,565,343. There were handled during the year 12,225,706,220 pieces of ordinary mail, besides Statistics of Railway Mail Service 17,077,708 pieces of registered matter and 591,492,490 pieces of city mail. The improperly addressed and illegible matter amounted to 13,503,486 pieces, of which 7,655,585 were returned to writers or corrected and forwarded to destination, the remainder being sent to the Dead-Letter Office for disposition.

It is with great regret I report that during the year there has been a larger number of casualties than in any previous year, the total number being 597, in which 7 railway postal clerks were killed, 34 seriously injured, and 146 Relief should be granted to families of clerks killed or disabled. slightly injured. It is urged that some provision be made by Congress for the relief of the families of those clerks who are killed while on duty, and of those who are permanently disabled or injured in the discharge of their duty.

I wish to renew the recommendation frequently made by my predecessors for legislation effecting the reclassification of the Railway Mail Service; providing punishment for persons who attempt to enter a postal car by force, or who Other recommendations. assault a railway postal clerk while in the discharge of his duty as such, and requiring publishers of newspapers to make primary separation of their papers and periodicals for mailing.

During our recent war with Spain the mail-bag repair shop connected with this Department was able to render emergency service to the War Department in the making of tents for the use of the Army.

FOREIGN MAILS.

The payments during the year on account of foreign mail transportation amounted to \$1,625,686. There were 16 international sea post-offices in operation last year on the fast mail steamers plying on the Atlantic Ocean, in which over 14,000,000 letters and postal cards were distributed in transit.

The mail service on several lines of American steamships was necessarily suspended during the war with Spain by reason of the withdrawal of the steamers for use in the auxiliary navy.

During the year two contracts were made under the act of March 3, 1891, one for service between New York and New contracts made. Tampam via Havana, Cuba, and the other for carrying the mail from Boston and Philadelphia to Port Antonio, Jamaica.

EXPENDITURES IN DETAIL.

The expenditures of the postal service for the year are shown, by items, in the following statement:

Transportation of the mails on railroads	\$30,449,837.34
Compensation of postmasters.....	17,453,433.58
Free-delivery service	13,386,593.69
Compensation of clerks in post-offices.....	10,589,069.23
Compensation of railway post-office clerks.....	8,066,602.54
Transportation of the mails on star routes	5,286,614.87
Railway post-office car service	3,753,416.64
Transportation of foreign mails.....	1,620,282.71
Rent, light, and fuel for first, second, and third class offices	1,581,649.80
Mail-messenger service.....	987,163.91
Manufacture of stamped envelopes.....	751,045.09
Transportation of the mails—regulation screen or other wagon service.....	734,491.12
Transportation of the mails on steamboats.....	418,635.14
Special-delivery service.....	370,383.56
Mail depredations and post-office inspectors.....	361,744.57
Mail bags and catchers.....	314,869.33
Transportation of the mails—electric and cable cars..	204,939.46
Manufacture of postage stamps.....	180,273.37
Transportation of the mails—special facilities, etc...	175,973.00
Manufacture of postal cards.....	159,128.03
Miscellaneous expenses for post-offices, including furniture.....	146,531.09
Balance due foreign countries	139,808.52
Blanks, blank books, etc., for money-order service...	104,427.01
Registered-package, tag, official, and dead-letter envelopes	103,000.00
Wrapping twine.....	84,980.72
Renting of canceling machines	63,814.39
Stationery for post-offices	54,915.21
Experimental rural free-delivery service	49,999.71
Postmarking and rating stamps.....	44,985.40
	<hr/>
	97,638,599.68
Expenditures under 20 smaller items of appropriations.	214,801.26
	<hr/>
Total expenditures for the year	97,853,401.90
Add. expenditures during the year on account of previous years	180,115.68
	<hr/>
Grand total	98,033,517.58

POSTAL REVENUE.

The postal revenue from all sources was as follows:

Sales of stamps, stamped envelopes, letter sheets, and postal cards	\$85,022,074.96
Box rents.....	2,572,241.65
Money-order receipts	1,196,633.25

Letter postage paid in money, mostly balances from	
foreign postal administrations	\$118, 756. 96
Miscellaneous receipts.....	50, 712. 43
Fines and penalties.....	27, 695. 67
Receipts from unclaimed dead letters.....	10, 502. 13
Total receipts	89, 012, 618. 55
Excess of expenditures over receipts.....	9, 020, 905. 06

THE STAMPED-ENVELOPE CONTRACT.

The four years contract for the furnishing of stamped envelopes expired on the 1st of October, 1898. The proposals, issued before my entrance upon office, looking to a new contract, called for bids both upon the Government formula of paper and upon samples submitted by bidders. This led to the result that the lowest bid upon the Government standard paper was made by one party and the lowest bid upon sample by another, the latter being lower than the former. An award had been made before the question came to me, but the contract had not been executed, and as the matter is one of great importance, involving an expenditure of several million dollars, I deemed it incumbent upon me before taking action to make a careful and thorough examination of the subject. As a result of this inquiry I decided that the public interests would best be served by exercising the right of reopening the question and advertising for new bids upon the Government standard paper alone.

Circumstances
attending the
award.

Some time had been consumed in the examination, and in order to give the successful bidder ample opportunity for preparing to execute his contract it was determined that the term of the new contract should begin, not upon the expiration of the old, but on the 1st of January, 1899. It was not felt, however, that the old contract could rightfully be extended over the intervening three months, since the first bidding had developed the fact that lower prices could be secured.

Accordingly, an emergency arrangement was entered into with the parties who actually made the envelopes under the old contract, to continue the work at the price of the lowest bid. The propriety of this arrangement is manifest from the fact that under it the expenditure for stamped envelopes will be about \$68,000 less than it would have been had the old contract been extended. The new proposals resulted in securing still more advantageous terms for the Government. Several bids were submitted

Large saving
effected.

and under the lowest, which was accepted, the reduction of expenditure during the four years of the contract, as compared with the prices under the old contract, is estimated to be about \$1,400,000.

PROPOSED OCEAN PENNY POSTAGE.

Reduction of
ocean postage
should be de-
ferred.

The proposal of "ocean penny postage" has been the subject of discussion during the past few years, and has recently excited renewed interest in connection with the adoption of this rate between England and her colonies. The project is attractive, and there is much to be said for it; but the conditions under which we approach its treatment are very different from those which prevail in other nations. Other countries have short land transit, while our land distance is often greater than the ocean distance. Taking into account the area covered, our rate is lower than that of other nations. Without now discussing the objections involved in providing sea payment when the ocean rate shall be reduced to the domestic rate, or the question whether a reduced domestic rate ought not to precede a reduced ocean rate, these considerations seem to make it clear that the immediate contemplation of so marked a change, however desirable in itself, would be premature.

DETAILS OF ADMINISTRATION.

During the year there were 15,600,220 pieces of mail matter registered at the post-offices in the United States. The amount of fees collected was \$998,199, being an increase in amount of business done of 7.2 per cent over the previous year.

Number of
pieces mailed.

There were 6,214,447,000 pieces of matter of all kinds placed in the mail during the year, of which letter mail, paid and free, amounted to 2,825,767,000, and newspapers and periodicals, constituting second-class matter, were mailed to the number of 2,069,916,000.

The special-delivery business transacted during the year brought a profit to the Government of \$116,407, the value of the stamps sold being \$487,346, and the amount paid to the 1,903 messengers employed being \$370,383. The cost of manufacturing the stamps necessary was but \$555.57.

Increased de-
mand for stamp-
ed paper.

The total number of postage stamps, stamped envelopes, postal cards, etc., issued to postmasters during the year was 4,614,526,090, having a total value of \$87,312,310.37, an increase in value of \$7,680,798.76, or 9.64 per cent, over the issues of the previous year.

The weight of second-class matter mailed by publishers and news agents during the year at the pound rate of post-

age was 336,126,338 pounds, upon which \$3,361,263.38 postage was collected. Adding the estimated weight of this class of matter which is mailed free in the counties of publication gives a total of mailings for the year of 395,442,750 pounds. The number of post-offices at which second-class matter was mailed is 9,378, an increase of 74 over the preceding year. Weight of second-class matter.

The aggregate amount of the penalties of postmasters' bonds now in force is, in round numbers, \$126,500,000.

During the fiscal year 3,079 cases of special depredations on the mails, such as highway robberies and robberies of post-offices, were investigated, a decrease of 89 in the number of such cases over the previous fiscal year. The total number of arrests for violations of the postal laws made during the year was 1,700. Of this number 95 were postmasters, 32 assistant postmasters, 41 clerks in post-offices, 10 railway postal clerks, 23 letter carriers, 36 mail carriers, 18 others in minor positions, and the remaining 1,445 were in no way connected with the postal service. Of the latter 441 were post-office burglars. There were 1,010 cases disposed of in the United States courts, resulting in 590 convictions, and 616 cases were left pending in the United States courts on July 1, 1898. Other criminals were tried in the State courts, and 48 cases were disposed of, resulting in 32 convictions and 16 acquittals, and leaving 26 cases awaiting trial at the close of the fiscal year. Decrease of depredations on the mail.

The records of the Department show that during the last fiscal year 3,601 post-offices were established, an increase of 2,000 over the year 1897; 1,046 offices were discontinued, being 117 more than in the previous year; on June 30, 1898, there were 3,816 post-offices of the Presidential class, being an increase of 54 over last year; the number of fourth-class post-offices was 69,754, an increase in this class of 2,494 offices; the total number of post-offices of all classes at the end of the fiscal year was 73,570, an increase of 2,548 over the previous year. Post-office statistics.

During the year there were 25,653 postmasters appointed, of which number 2,157 were appointed to offices of the Presidential class. These appointments were classified as follows: 143 on resignations, 39 on deaths, 1,454 on expiration of commissions, 406 on removals, and 115 on changes caused by offices becoming Presidential. There were 23,496 appointments of fourth-class postmasters, divided as follows: 8,200 on resignations, 881 on deaths, 8,400 on removals at the end of four years, 2,369 on removals, 45 caused by offices being reduced from Presidential to fourth class, Appointments.

and 3,601 on establishment of new offices. The number of fourth-class offices advanced to the Presidential grade during the year was 115, while 45 Presidential offices showed such a falling off in the extent of business as to make it necessary to reduce them to the fourth class.

The total number of claims of postmasters for losses resulting from burglaries, fire, etc., considered during the year is 1,167. On June 30, 1897, 380 cases were pending; 1,147 have been filed during the year, leaving 360 cases pending at the end of the fiscal year. The amount of the losses is much less than in preceding years. The total amount of the claims allowed during the year is \$78,099.21, while in 1896 claims amounting to \$104,640.19, and in 1897 to \$119,350.90, were allowed. Of the amount allowed during the year, \$12,889.08 is for postal funds, \$52,898.52 for postage stamps, and \$12,311.61 for money-order funds. The amount of \$16,238.52 was lost by fire, \$55,976.68 by burglary, \$3,588.03 in transit from post-offices to the depository offices, and \$2,295.98 was lost from miscellaneous causes.

Arrangement
made for furnish-
ing postage
stamps.

During the year an arrangement identical with the previous one was made with the Bureau of Engraving and Printing for furnishing until the year 1902 all the postage stamps required by the Department.

POSTAGE STAMPS FOR INTERNAL-REVENUE PURPOSES.

One advantage resulting from the above-mentioned arrangement was the opportunity which it gave the Bureau of Engraving and Printing to avoid what might have otherwise been a serious public embarrassment, the circumstances being as follows:

Treasury De-
partment as-
sisted.

It will be remembered that there was a period of only seventeen days from the passage of the war-revenue act until most of its provisions went into effect, the measure being approved on the 13th of June, 1898, and the taxes imposed by it being collectible on and after the 1st of July following. This time was too short to enable the Treasury Department to make and distribute the necessary supply of internal-revenue stamps which the law required. Application was therefore made to me to allow the use of postage stamps for internal-revenue purposes—principally of the 1 and 2 cent denominations—bearing the letters "I. R." to distinguish them from stamps good only for postage.

Large number
of postage
stamps used for
internal-revenue
purposes.

As the stock of postage stamps on hand at the time was quite large, making it altogether certain that the use of such as were required for other than postage purposes

would result in no embarrassment to the postal service, I readily gave the permission asked, and accordingly large numbers of the stamps were distributed at once. Over 125,000,000 postage stamps were issued in this way.

LOSSES OF REGISTERED MAIL.

The total number of pieces of registered mail handled by the Post-Office Department during the fiscal year ending June 30, 1898, is estimated at 15,600,220. Out of this enormous amount of mail matter there grew but 6,445 complaints of loss. In 3,176 of these cases it was discovered that no actual loss had been suffered, and in 1,425 the full amount of loss alleged was recovered, leaving only 504 cases in which actual loss was sustained, or only one loss for every 24,608 pieces of registered mail handled, which shows a marked decrease in actual loss as compared with the previous fiscal year, the record of that year showing one loss for every 22,840 pieces of registered mail handled.

Marked decrease in losses.

LOSSES OF ORDINARY MAIL.

Complaints affecting ordinary mail were received by the Department to the number of 71,518, an increase of 4,740 over those received during the previous year. These complaints are investigated promptly and disposed of as rapidly as the number of inspectors available for that purpose will permit. During the year the sum of \$22,471, being money recovered from thieves or found loose in the mails, was returned to the rightful owners. The total amount of money collected by inspectors during the fiscal year was \$267,910, which represents collections of balances due from postmasters, penalties for violating postal laws and regulations, amounts recovered for fraudulent use of the mails, etc.

SPECIAL WORK OF THE INSPECTOR FORCE.

The usual work of the inspector force was necessarily largely increased by reason of the recent war with Spain, and a number of inspectors were detailed to the special duty of investigating losses in soldiers' mail. Mail matter of this class was more exposed to depredation than that which passed only through the hands of regular postal officials. Notwithstanding the care exercised, a number of depredations were committed, but I am gratified to state that in many cases the guilty persons were apprehended. The distribution of the soldiers' mail was supervised by several of the most experienced inspectors, who were detailed to take

At military post-offices. charge of military stations and post-offices, notably those at Chickamauga Park, Camp Black, Montauk, and Port Tampa. These inspectors, cooperating with the officials detailed from other bureaus of the Department, aided greatly in relieving the congested condition of the mails at military camps and in establishing and conducting a reasonably satisfactory service.

IN ALASKA.

The service greatly im- proved. With the discovery of gold in the Yukon region and the consequent growth of population in southern Alaska, as well as the settlement of a large number of towns in other sections of that Territory, the existing postal service proved entirely inadequate to the needs of the settlers. Two inspectors were directed to proceed to Alaska to investigate the condition of affairs and to make recommendations for the betterment of the service. Owing to the long distances to be traversed in reaching the Territory and the time which would be consumed in communicating with the Department, these inspectors were furnished with blanks for the appointment and bonding of postmasters and the letting of contracts for carrying the mails. They were also empowered by the Department to authorize the appointment of necessary clerks in post-offices where additional service was required. Post-offices were established by them down the Yukon River from the Canadian border to the Bering Sea. Large remittances of delayed money-order funds were collected, and through their efforts delayed mails were promptly forwarded in many instances where the contractor was unable to furnish the necessary transportation. The work performed by these inspectors has resulted in a very great improvement in our Alaskan mail service.

FRAUDULENT BUSINESS IN THE MAILS.

Effort to purify the mails continued with success. The efforts of the Department have been constantly directed, as heretofore, to the suppression of enterprises intended to obtain money or property by means of false and fraudulent pretenses, representations, or promises. The suppression of this class of business is not only enjoined by law, but is necessary for the protection of the public against shrewd and cunningly devised schemes to defraud; and in nearly all cases the efforts of the operators of these enterprises are directed towards those who are seeking opportunities to improve their financial condition and are unable to bear the losses involved in these transactions.

The results of this work have been very satisfactory, and prompt action in important cases and successful prosecutions have resulted in greatly purifying the mails; so much so that I think it is safe to state that there is less fraudulent business conducted through the medium of the United States mails than ever before.

LEGISLATION NEEDED.

The following recommendations for changes in existing laws, some of which have heretofore been made, are submitted:

That an amendment be enacted making the depredations of railway postal clerks a continuous offense, as it has frequently happened that railway postal clerks who have been arrested for violations of the postal laws have escaped punishment by reason of the fact that the railway lines on which they were employed were embraced in two different judicial districts, which sometimes renders it impossible to locate the venue.

Depredations of railway postal clerks should be made a continuous offense.

That a severer penalty be provided for employees of the service who may be found guilty of embezzling or destroying newspaper mail.

That more stringent statutes be enacted covering "green goods" and obscene matter, and in this connection that section 334, Postal Laws and Regulations of 1893 (Rev. Stat., sec. 5480), relating to "green goods" and schemes to defraud be amended, making these offenses continuous, as is now the law concerning lottery cases under section 331, Postal Laws and Regulations, the purpose being to avoid obstructions to and miscarriage of justice incident to trials in some large cities where criminals may have friends and sympathizers.

"Green goods" law should be amended.

That the use of postage stamps as currency be taken up and considered, with the view of effecting some legislation which, if it would not entirely do away with stamps as a medium of exchange, may at least curtail their use in this manner.

Use of postage stamps as currency deprecated.

That an appropriation be made for purchasing a new outfit of telltale locks for use in mailing registered matter.

That the law establishing the special-delivery system be so amended as to remove the present restriction which prohibits postmasters of the first and second classes from paying for the special delivery of letters by salaried postal officials, thus permitting them to make use of such employees whenever it can be advantageously done and without detriment to other work, which sometimes is the case,

Amendments to act establishing special delivery system suggested.

and to authorize the Department to allow car fare to special-delivery messengers in the great cities during hours when there is no mail-messenger service between the post-office and its stations, and when extraordinary distances have to be traveled by messengers in making deliveries.

In concluding this report, I beg to bear testimony to the courtesy and intelligence of my assistants and of all the officers and clerks of the Department, who, in a time of exceptional activity and demands, have devoted themselves to their work with uniform fidelity and efficiency, and I may add that the standard of the general service has been successfully maintained.

I have the honor to be, very respectfully, yours,

CHARLES EMORY SMITH,

Postmaster-General.

APPENDIX.

THE ACT AUTHORIZING THE ESTABLISHMENT OF POST-OFFICES AT MILITARY POSTS OR CAMPS—PRESIDENT'S ORDER AUTHORIZING THE EXTENSION OF THE MILITARY POSTAL SERVICE OVER TERRITORY IN POSSESSION OF THE UNITED STATES ARMY—DETAILED STATEMENT OF THE PLAN FOR HANDLING THE MAILS IN CONNECTION WITH THE MILITARY POST-OFFICES—ITEMIZED STATEMENT OF EXPENDITURES UNDER THE ACT.

[PUBLIC—No. 122.]

AN ACT to authorize the establishment of post-offices at military posts or camps.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That during the continuance of the existing war the Postmaster-General may, in his discretion, establish a temporary post-office at any military post or camp for the purpose of supplying the officers and troops there encamped with mails, the location of which post-office may at any time be changed to any other post or camp. On the establishment of such post-office he shall cooperate with the Secretary of War or officer commanding such post or camp for the purpose of securing the detail of an officer of the Regular or Volunteer Army of suitable rank to act as postmaster, who shall, when the exigency will permit, execute a bond to the United States as such, and of a sufficient number of noncommissioned officers and privates to act as clerks in said post-office, who shall serve as such without additional salary, pay, or compensation other than that attaching to their rank and position in the Army. Each of said persons shall, before entering upon the discharge of his duties, take the oath prescribed for persons employed in the postal service. In any case where it is deemed impracticable by the military authorities to detail persons from the Army to act as postmaster or clerks the Postmaster-General is authorized to appoint a civilian as postmaster, and also to make a special order allowing to him reasonable compensation for clerical services and to meet the necessary expenses of said office, as well as a proportionate increase of salary to the postmaster during the period of such extraordinary business as may attach to his office, under the provisions of section thirty-eight hundred and sixty-three, Revised Statutes, payable out of the appropriations for the postal service. He may also provide for the issue and payment of money orders at any post-office established under the provisions of this Act, after the postmaster shall have given bond as required by law.

SEC. 2. That the Postmaster-General shall supply to post-offices referred to in the preceding section all necessary postage stamps, stamped envelopes, postal cards, and other supplies of whatever description. He may also prescribe regulations for the conduct of the business at such post-offices in conformity, so far as the same may be applicable, to the regulations relating to the ordinary postal service.

SEC. 3. That in any case where, in the judgment of the Postmaster-General, any military post or camp can be better and more economically supplied by a branch post-office, he may, without reference to its distance from the main office, establish the same, and meet the expenses thereof by special order, as in the case of post-offices referred to in the preceding section.

Approved, June 6, 1894.

LETTER FROM POSTMASTER-GENERAL TO SECRETARY OF WAR, SUGGESTING PLAN
FOR OPERATING MILITARY POST-OFFICES.OFFICE OF THE POSTMASTER-GENERAL,
Washington, D. C., June 25, 1898.

SIR: With the movement of troops and the establishment of camps or places of rendezvous in the existing war, the Post-Office Department made such immediate arrangements for the postal service in connection therewith as the exigencies required and permitted.

As soon as practicable after the opening of hostilities, Congress was asked by this Department to pass an act making such special provision and conferring such authority as the emergency demanded, and Congress accordingly passed a bill entitled "An act to authorize the establishment of post-offices at military posts or camps," a copy of which I have the honor to inclose herewith.

Pursuant to this act, I beg to invite your cooperation in the establishment of a more complete system for the military mail service, and suggest the following general plan:

1. The Postmaster-General shall establish a post-office or branch post-office at every military post or camp which has been or may be created during the existing war.

2. Such post-office or branch post-office shall be under the immediate charge and direction of an official of the postal service, detailed for that purpose by the Postmaster-General, and who shall be designated as "postal superintendent in charge."

3. The Secretary of War shall provide for the designation of an officer of the Regular or Volunteer Army attached to the general headquarters of the camp, who shall represent the military organization in its relations to the postal service and whose duty it shall be to keep the postal superintendent in charge advised of the movement of troops to and from the camp.

4. The regimental mail service shall be in charge of the adjutants of regiments, who shall be held responsible for the collection and distribution of the mail within the several companies. Such detail of noncommissioned officers and privates shall be made as may be necessary for this purpose. Such persons, before entering upon the discharge of their duties, shall take the oath prescribed for persons employed in the postal service, and shall serve without additional salary, pay, or compensation other than that attaching to their rank and position in the Army.

5. The Post-Office Department will arrange to separate incoming army mail by headquarters, by regiments, and so far as possible by companies, and deliver such mail properly sacked or pouched at such point as shall be most convenient for its transfer to the military detail, where, under the direction of the War Department, it shall be received by the Quartermaster's Department and through that department delivered to the respective general and regimental headquarters.

6. The Quartermaster's Department shall also collect from the general and regimental headquarters outgoing mail, to be in turn delivered to the employees of the Post-Office Department at the point of departure.

7. The Post-Office Department will detail for each camp an expert money-order clerk, who will give requisite bonds, and be fully supplied from time to time with postage stamps, stamped envelopes, postal cards, and other supplies and blanks of whatever description. Applications for money orders within the regiments could be made out and, with the money accompanying, could be grouped and sent by a properly authorized person to the money-order clerk at headquarters, who would issue regular money orders therefor and return them through the same channels.

8. For the more complete efficiency of this system the Postmaster-General will, whenever necessary, designate a post-office inspector or an officer or employee of the Railway Mail Service to be associated with the postal superintendent in charge at any camp to aid in the installation or operation of the military mail service

9. Whenever any military expedition shall be made, the Postmaster-General will detail a sufficient force of trained employees of the postal service to accompany it and organize the same system of military mail service at any camp that may be established.

Under the system thus outlined, the Post-Office Department would keep the supervision and management of the mails; the Quartermaster's Department would undertake their transportation within the camp to and from the point of departure and arrival, and the adjutants would be responsible for the regimental and company collection and distribution.

If this plan meets your approval, I beg to ask that you will issue the necessary orders for its full and effective operation so far as it depends on the War Department and the military organization.

Very respectfully,

CH. EMORY SMITH,
Postmaster-General.

The Honorable the SECRETARY OF WAR.

ORDER OF THE PRESIDENT, DATED JULY 21, 1898, AUTHORIZING THE EXTENSION OF THE MILITARY POSTAL SERVICE OVER TERRITORY IN POSSESSION OF THE UNITED STATES ARMY.

In view of the occupation of Santiago de Cuba by the forces of the United States, it is ordered that postal communication between the United States and that port, which has been suspended since the opening of hostilities with Spain, may be resumed, subject to such military regulations as may be deemed necessary.

As other portions of the enemy's territory come into the possession of the land and naval forces of the United States, postal communication may be opened under the same conditions.

The domestic postal service within the territory thus occupied may be continued on the same principles already indicated for the continuance of the local municipal and judicial administration, and it may be extended as the local requirements may justify under the supervision of the military commander.

The revenues derived from such service are to be applied to the expenses of conducting it, and United States postage stamps are therefore to be used.

The Postmaster-General is charged with the execution of this order in cooperation with the military commander, to whom the Secretary of War will issue the necessary directions.

WILLIAM MCKINLEY.

JULY 21, 1898.

Expenditures authorized from the appropriation for the military postal service for the months of July, August, September, October, and November, 1898.

	July.	August.	September.	October.	November.	Total.
Salaries of railway-mail clerks..	\$2,682.54	\$3,989.08	\$3,915.36	\$3,639.06	\$3,065.34	\$17,291.38
Salaries of post-office clerks.....	3,481.29	5,517.22	8,428.65	7,653.79	6,528.74	31,619.69
Expenses of railway-mail and post-office clerks	1,049.90	1,429.29	291.75	2,929.30	1,947.05	7,647.29
Expenditures for miscellaneous items	2,172.64	923.19	1,658.42	3,899.83	1,297.23	9,951.31
Total	9,386.37	11,858.78	14,294.18	18,121.98	12,848.36	66,509.67

P A P E R S
ACCOMPANYING
THE REPORT OF THE POSTMASTER-GENERAL.

**REPORT OF THE COMMITTEE TO INVESTIGATE POSTAL
SERVICE IN PORTO RICO.**

ORDER APPOINTING COMMITTEE.

**OFFICE OF THE POSTMASTER-GENERAL,
*Washington, D. C., August 27, 1898.***

ORDER No. 368.]

Maj. James E. Stuart, of the inspectors' division; Charles F. Trotter, of the salary and allowance division; John M. Masten, of the Railway Mail Service; and William M. Mooney, of the finance division, are hereby detailed as a committee to proceed to Porto Rico, and investigate and report upon the conditions, operations, and requirements of the postal service on that island. Major Stuart will act as chairman of the committee, and M. A. Macdonald, of the contract division, is hereby designated to accompany the committee as clerk. Instructions defining the duties and powers of the committee will be issued hereafter.

**CH. EMORY SMITH,
*Postmaster-General.***

LETTER OF INSTRUCTIONS TO COMMITTEE.

AUGUST 27, 1898.

SIRS: You have been severally detailed, by Order No. 368 of this date, as a committee to proceed to Porto Rico, for the purpose of examining into and reporting upon the conditions, operations, and requirements of the postal service of that island.

You have been chosen from the various branches of the service in order that all may be represented, and that the inquiry may be made complete and comprehensive.

You will examine fully into the postal service of Porto Rico, both as it has been and still may be conducted under the Spanish system, and as it has been modified in those portions of the island within the occupation of the American forces. You will inquire into the extent and efficiency with which it is still operated, into the administration of the post-offices, the collection and delivery of the mail, the money-order and registration systems, the carrier and transportation methods, the number, efficiency, and pay of the employees in the various branches, and all other matters pertaining to the service. The inquiry will include

an investigation into the sources and amount of the revenue and its relations to the expenditures.

You will examine especially into the measures which may be necessary in making the existing service conform as far as practicable to the rules and regulations which govern the postal service in the United States.

In the prosecution of your inquiry you may find that the existing service can be improved by immediate steps which are practicable and warranted under the law. In that case you are authorized to direct that the action which you may deem expedient shall be taken, and the direction will be executed by Mr. H. M. Robinson, who is the postal superintendent in charge in Porto Rico, and who is to be recognized and conferred with as such. Any such action will be promptly reported.

It is to be borne in mind that our postal service is established in Porto Rico only by virtue of military occupation, is subject to military regulation, and is extended only as additional territory comes into possession of our military forces. It is authorized by the act of Congress approved June 6, 1898, entitled "An act to authorize the establishment of post-offices at military posts or camps," and by the order of the President dated July 21, copies of which accompany these instructions.

While the post-offices or stations created under the authority of the Department are established primarily to handle the mails to and from the land and naval forces of the United States, they will also carry on the general postal service of the communities in which they are located. As the American occupation advances this service will be extended. In those portions of the island not yet in the possession of the American forces the service presumably continues as heretofore, and it is expected that all legitimate means will be employed to facilitate intercommunication.

Major Stuart is designated as chairman of the committee, and all official communications will come through him. The committee will report from time to time as may be necessary and will present a complete report on the conclusion of its labors.

Very respectfully,

CH. EMORY SMITH,
Postmaster-General.

Maj. JAMES E. STUART,
Mr. CHARLES F. TROTTER,
Mr. JOHN M. MASTEN,
Mr. WILLIAM M. MOONEY.

INSTRUCTIONS TO SUPERINTENDENT OF SERVICE IN PORTO RICO.

OFFICE OF THE POSTMASTER-GENERAL,
Washington, D. C., August 30, 1898.

SIR: Herewith inclosed I hand you copy of the order of the Postmaster-General and accompanying instructions, recently issued, designating a committee of Post-Office Department officials who will proceed at once to Porto Rico.

In these instructions you will notice that the committee will confer with you as superintendent of the military stations in Porto Rico. If you find it necessary to temporarily absent yourself from station No. 1, you are authorized to leave it in charge of an assistant and to visit San Juan and other stations, spending what time may be necessary, in your judgment, at each of them for the purpose of satisfactorily organizing the postal service of the island.

You will accept instructions from Major Stuart, chairman of the committee, so long as the committee remains upon the island, reporting as heretofore direct to the Department.

If you deem it essential to the best interests of the postal service to make your headquarters at San Juan, you will so advise the Department, giving reasons.

You will advise with the committee in reference to the necessary expenses incurred in carrying out these instructions.

Yours, respectfully,

PERRY S. HEATH,
Acting Postmaster-General.

Mr. H. M. ROBINSON,
Superintendent Military Station No. 1, Porto Rico.

ORDER APPOINTING ADDITIONAL MEMBER OF COMMITTEE.

OFFICE OF THE POSTMASTER-GENERAL,
Washington, D. C., September 8, 1898.

ORDER No. 381.]

Ordered, Mr. D. H. Fenton, of the office of the Auditor for the Post-Office Department, is hereby appointed a member of the committee to investigate the postal service in Porto Rico. Order No. 368, of August 27, 1898, is modified accordingly.

PERRY S. HEATH,
Acting Postmaster-General.

REPORT OF THE COMMITTEE.

WASHINGTON, D. C., *November 11, 1898.*

SIR: In compliance with your order of August 27, 1898, No. 368, the committee appointed by you therein, consisting of Maj. James E. Stuart (chairman), Charles F. Trotter, John M. Masten, William M. Mooney, with M. A. Macdonald as secretary, and D. H. Fenton, an additional member of the committee appointed by your order of August 30, 1898, has visited Porto Rico, and has made an exhaustive inquiry into the postal service of that island, both as it was conducted under the Spanish system and as it has been performed during the occupation of the island by the American forces and as it is now being performed, the entire island being in the possession of the United States authorities, and has the honor to submit for your consideration the following report, together with such recommendations as it has deemed proper to make:

The committee sailed from New York August 31, 1898, on the transport *Seneca*, and after an uneventful voyage arrived at San Juan on the morning of September 6, 1898. After landing, a visit was made to the postal authorities in San Juan, the capital of the island, and an interview was had with the administrador general de correos, Don José Octaviano de Herrera, the officer in charge of the mail and telegraph service of the island, who received the committee with all possible courtesy and volunteered to furnish to the committee, and through it to the Department, all the information desired, which, we are pleased to state, was done under his direction, and the information thus obtained is embodied in this report.

We find that the mail service and the telegraph service were under the supervision of the same officials, the two services having been consolidated in 1886, for the purpose, it is understood, of reducing expenses.

At the capital, San Juan, were the principal offices of the service, and the officials charged with its general administration consisted, first, of an inspector-general of telegraphs and administrator-general, the two offices being combined in one person, and second, an interventor-general.

The duty of the first-named officer was the general supervision of the service in all its branches, while the duties of the second were that of a general executive officer.

The duties of the administration were divided among four bureaus, termed "negociados," each under the charge of a designated official.

To the first bureau was delegated matters relative to the hiring and discharge of employees, transfers, regulations governing promotions, punishment for insubordination or improper conduct among the employees, and estimates of expenses; also matters relative to construction and official and private telephones, the school of apprentices and examinations for entrance into the service, as well as the custody of the archives of the bureau.

To the second bureau were delegated matters relating to service, inspection of telegraph lines and stations, general and partial repairs, sketches of stations, statistics and relations with the railroad company, matters relating to the transmission of telegrams, discontinuance and changes of the service, claims for compensation for extraordinary service, remedies for defects in the service, telegraphic franchises, catalogues of stations and post-offices, postal telegraphic conventions (domestic and international), consideration of claims for losses in the mails, contracts for the carrying of land and maritime mails, disciplining of carriers on postal lines served by contractors, daily reports and establishment of postal-service schedules for land and maritime routes, extraordinary service caused by the obstruction of roads, the use of the mail service for smuggling purposes, the use of stamps already canceled, the compilation of the annual report, and the custody of the archives of the bureau.

The matters delegated to the third bureau were the planning and construction of new lines and branches, the planning and establishment of new stations, examination and purchase of office and line material, the distribution and the record of the same; the purchase and distribution of printed matter of all kinds, renting of local offices and allowances for the payment of the same, advertisements for land and maritime telegraph lines, advertisements for the purchase of materials of all kinds, the care and preservation of material of the administration, office and line material contained in the storehouses of the general administration, assembling and distribution of apparatus intended for the stations and of all matters which were intimately connected with the telegraphic and telephonic systems, repair of mail equipments, the keeping of a current account with the Auditor's office of such expenses as occurred in the warehouses, the inspection of electrical installations, and the custody of the archives of the bureau.

Matters which were under the jurisdiction of the fourth bureau were those relating to the auditing of accounts generally and to those of a disbursing officer. This bureau also had custody of its archives.

The annual salary account of the general administration was as follows:

Administrator-general	\$2,500
Interventor-general.....	2,000
Chief of bureau (personal)	1,500
Official in charge of international business	1,500
Chief of bureau (service).....	1,250
Chief of workshop	1,250
Chief of bureau (accounts)	1,000
Chief of bureau (equipments).....	750
Three clerks, at \$360	1,080
Janitor	300
Messenger	200
Total	13,330

All of the officials and clerks of the service, both mail and telegraphic, were included in a service corresponding to the classified civil service of our Government, and vacancies in the higher-salaried places of the service were filled by promotions from the lower grades on the basis of length of service and efficiency. In this matter the committee has not deemed it necessary, nor considered that it was contemplated in your instructions, to examine closely into this matter of promotions, but deems it sufficient to say that the officials were divided into various numbered classes.

In all there were ninety-one post-offices in operation under the Spanish Government prior to the occupation of the island by the American forces, and the salaries of the postmasters ranged from \$75 per annum to \$1,750 per annum, which latter amount was paid to the postmasters at San Juan, Ponce, and Mayagüez. At the larger offices clerks were employed at salaries ranging from \$180 to \$1,500 per annum.

A statement is made below as to the postal receipts of each office on the island from January 1 to December 31, 1897, in which is also given the salary of each postmaster and clerk, and the rent paid for quarters leased by the general administration for the use of local post-offices. The sums stated in this report are in Porto Rican money, unless otherwise expressly stated.

Office.	Postal receipts.					Expenditures.		
	Island.	Cuba.	Spain.	Internat- ional.	Total.	Salaries.		Rent.
						Postmas- ters. <i>a</i>	Clerks. <i>a</i>	
Adjuntas.....	\$103.56	\$6.56	\$73.20	\$27.06	\$210.38	\$500.00	\$180.00	.....
Aguadilla	1,232.63	36.36	208.80	346.60	1,824.39	1,250.00	1,930.00	\$300.00
Aguas-Buenas	311.42	5.04	20.74	6.86	344.06	500.00	180.00	240.00
Albonito	244.80	16.45	79.74	17.18	358.17	750.00	180.00	.....
Aguada.....	59.76	1.00	6.12	4.08	70.96	110.00	.....	.....
Aldea Saenz.....	17.39	.60	3.66	2.00	23.65	75.00	.....	.....
Añasco.....	231.12	9.60	43.92	13.66	298.30	500.00	180.00	.....
Arecibo	3,772.24	132.51	1,234.64	576.96	5,716.35	1,250.00	1,930.00	(b)
Arroyo	464.86	11.72	55.00	52.39	583.97	1,000.00	930.00	168.00
Barceloneta.....	183.87	6.20	8.99	10.04	209.10	500.00	.....	.....
Barranquitas.....	82.00	6.04	7.26	2.48	97.78	500.00	180.00	.....
Barros.....	175.90	2.40	63.84	3.28	245.42	500.00	180.00	.....
Bayamón	340.21	27.10	83.35	52.37	503.03	750.00	180.00	300.00
Cabo Rojo.....	357.90	13.45	106.11	32.12	509.58	500.00	180.00	.....
Cáguas	465.30	16.20	174.58	124.48	1,180.56	1,000.00	1,430.00	(a)
Camuy.....	323.52	3.20	25.14	73.48	425.34	1,000.00	180.00	240.00
Canóvanas	73.16	3.44	10.26	5.85	92.72	500.00	.....	.....
Carolina	159.73	4.91	132.20	10.69	307.53	500.00	180.00	240.00
Cataño.....	16.40	.....	3.60	3.20	23.20	75.00	.....	.....

a Performs both telegraphic and postal duties. *b* Government building.

Office.	Postal receipts.					Expenditures.		
	Island.	Cuba.	Spain.	International.	Total.	Salaries.	Rent.	
						Postmasters. ^a		
						Clerks. ^a		
Cayey	821.52	22.97	185.94	23.69	1,055.14	750.00	180.00	396.00
Ceiba	70.48	.....	7.44	2.48	80.40	500.00	.....	.....
Cialitos .....	.....	.....	.....	.....	.....	75.00	.....	.....
Cidra	50.80	3.12	14.00	6.87	74.79	500.00	180.00	.....
Ciales	143.15	12.08	80.39	10.80	246.42	500.00	180.00	.....
Coamo	1,001.16	11.68	68.00	26.36	1,107.80	500.00	180.00	.....
Comerio	199.12	4.26	15.95	6.72	226.05	500.00	180.00	264.00
Corozal	114.06	1.25	11.64	1.76	128.71	500.00	180.00	192.00
Coto del Laurel	53.31	.80	18.00	1.76	73.87	75.00	.....	.....
Culebra .....	.....	.....	.....	.....	.....	.....	.....	.....
Culebrita .....	.....	.....	.....	.....	.....	.....	.....	.....
Dorado	91.99	.88	3.70	2.02	98.59	75.00	.....	.....
Fajardo	1,095.58	8.68	57.69	9.56	1,171.51	1,000.00	930.00	168.00
Florida .....	.....	.....	.....	.....	.....	75.00	.....	.....
Güánica	56.60	1.04	4.86	2.48	64.98	75.00	.....	.....
Guaraguan	18.12	.40	4.56	3.84	26.92	75.00	.....	.....
Guayama	1,423.20	80.82	241.20	362.02	2,107.24	1,000.00	930.00	168.00
Guaynabo .....	.....	.....	.....	.....	.....	75.00	.....	.....
Gurabo	89.82	2.92	51.66	1.68	146.08	110.00	.....	.....
Guayanilla	204.26	4.44	63.02	20.24	291.96	500.00	180.00	.....
Hatillo	79.87	.....	9.69	4.80	94.36	110.00	.....	.....
Hormigueros	30.48	1.80	8.16	3.08	43.52	75.00	.....	.....
Humacao	1,631.89	157.87	1,226.68	240.20	3,256.64	1,500.00	3,180.00	420.00
Isabela	171.81	1.24	19.23	4.63	196.91	500.00	.....	.....
Isla de Viéques	262.35	2.84	9.42	10.00	284.61	110.00	.....	.....
Jayuya	242.70	6.04	12.47	8.20	269.42	75.00	.....	.....
Juana Díaz	462.24	27.00	186.06	4.85	680.15	500.00	180.00	.....
Juncos	112.10	10.55	37.62	13.44	173.81	500.00	180.00	.....
Lajas	73.95	.72	3.90	3.68	82.25	75.00	.....	.....
Lares	1,044.34	15.08	123.30	35.98	1,218.70	500.00	180.00	.....
Las Marias	\$100.04	\$34.60	\$76.26	\$5.22	\$216.12	\$500.00	\$180.00	.....
Las Piedras	133.04	2.48	16.68	16.32	168.52	500.00	180.00	.....
Loiza	79.80	1.60	5.13	1.86	88.39	75.00	.....	.....
Luquillo	131.55	3.90	14.52	10.10	160.07	500.00	180.00	.....
Manatí	1,128.04	3.20	37.62	15.96	1,184.82	1,000.00	180.00	\$240.00
Maricao	185.16	9.59	60.56	22.14	277.45	500.00	180.00	.....
Mannabo	216.00	4.18	8.28	29.12	257.58	500.00	180.00	.....
Maureyes .....	.....	.....	.....	.....	.....	75.00	.....	.....
Mayaguez	1,674.75	523.00	2,381.04	1,250.66	5,829.45	1,750.00	7,610.00	600.00
Moca	39.96	.80	8.64	1.92	51.32	75.00	.....	.....
Moróvis	49.90	.....	7.91	.....	57.81	500.00	180.00	.....
Naguabo	299.52	2.92	13.14	6.99	322.57	500.00	180.00	.....
Naranjito	94.80	4.80	15.24	.....	114.84	75.00	.....	.....
Patillas	561.60	7.52	15.39	19.70	604.21	500.00	180.00	.....
Peñuelas	158.50	6.48	10.38	40.22	215.58	500.00	180.00	120.00
Playa de Naugabo	97.40	11.56	8.10	88.04	205.10	110.00	.....	.....
Playa de Ponce	1,471.36	195.96	1,088.00	792.45	3,547.77	1,000.00	930.00	285.00
Playa Mayagüez	2,358.82	1,217.28	2,159.19	2,474.82	8,210.11	1,000.00	930.00	300.00
Ponce	4,657.06	218.32	1,150.53	1,035.89	7,061.80	1,750.00	7,610.00	720.00
Punta de Santiago	162.60	8.00	56.52	4.54	231.66	110.00	.....	.....
Quebradillas	217.44	9.72	20.88	5.34	253.38	500.00	180.00	.....
Rincón	51.18	1.92	12.18	2.80	68.08	110.00	.....	.....
Río Grande	224.28	1.66	16.50	2.16	244.60	500.00	180.00	.....
Río Piedras	418.19	3.45	91.81	16.58	530.03	1,000.00	930.00	264.00
Sábana Grande	238.68	4.61	16.14	5.48	264.91	500.00	180.00	.....
Salinas	159.20	8.57	20.70	6.54	195.01	500.00	180.00	.....
San German	1,085.80	15.84	126.06	64.22	1,291.92	1,000.00	930.00	168.00
San Juan	17,091.08	1,048.14	7,531.46	6,132.38	31,803.36	1,750.00	22,690.00	1,200.00
San Lorenzo	124.90	4.50	20.94	3.20	153.54	500.00	180.00	.....
San Sebastian	262.56	5.89	93.60	31.30	393.35	500.00	180.00	.....
Santa Isabel	166.00	12.40	61.20	10.20	249.65	500.00	180.00	.....
Santurco	256.68	17.16	68.13	50.58	392.55	1,000.00	180.00	300.00
Tallaboa	24.24	.88	13.26	2.08	40.46	75.00	.....	.....
Toa Alta	235.08	8.14	8.95	2.40	254.57	500.00	.....	.....
Toa Baja	76.75	1.92	7.75	2.32	88.74	75.00	.....	.....
Trujillo-Alto	41.75	.....	7.83	.....	49.58	75.00	.....	.....
Utuado	760.32	26.40	281.58	115.32	1,183.62	1,000.00	930.00	300.00
Vega Alta	199.40	4.94	8.06	4.12	216.52	110.00	.....	.....
Vega Baja	173.85	4.16	68.26	27.73	274.00	500.00	180.00	.....
Villalba Arriba	60.00	.76	2.46	4.88	68.10	75.00	.....	.....
Yabucoa	757.72	9.36	32.40	17.00	816.48	500.00	180.00	.....
Yauco	1,266.75	25.18	274.44	250.72	1,817.09	1,000.00	930.00	266.00
Total	56,060.80	4,151.79	20,770.36	14,017.97	95,000.92	46,380.00	61,960.00	7,859.00

^a Performs both telegraphic and postal duties.

Mail matter, under the Spanish system, was divided into eight classes—the first class, letters; second class, postal cards; third class, newspapers; fourth class, printed matter of all kinds; fifth class, business papers; sixth class, samples of merchandise and medicines; seventh class, letters of declared value; eighth class, postal packages containing insured articles.

The administration controlled exclusively the carrying of letters, postal cards, and newspapers, excepting open letters of introduction carried by interested parties; those carried between two communities not connected by the postal service; letters sent by a private party by means of a messenger in his service; correspondence within a town by hand; correspondence transacted by railroads or land or maritime express companies pertaining to their own business; letters sent out from places, where it was not possible to purchase stamps, for conveyance to post-offices to be postage paid and mailed; franked matter taken to post-offices or which may be sent free, and newspapers having no return address.

Fines were imposed for infraction of these regulations amounting to five times the proper postage, and of not a less sum than \$1, payable in currency of the standard value. Transportation through the mail was denied to matter dangerous to employees handling it, or which might cause injury to other mail matter; letters or packages which contained money, precious metals, or valuable stones, which were not previously insured; articles whose weight or size exceeded the required limits; and, finally, letters or packages having written on the outside words offensive to morals or calculated to create disorder. No object could circulate through the mail, whatever might be its character, origin, or destination, which exceeded in weight two or four kilograms, according to the classification to which it was subjected.

The rates of postage for the several classes of mail matter heretofore mentioned were as follows:

Class		1.	2.	3.	4.	5.	6.
1. Letters.....	{Weight..	15 gr.		15 gr.	15 gr.	15 gr.	15 gr.
	{Rate....	.03	.02	.04	.06	.15	.06
2. Postal cards.....	{Single..	.02	.02	.02	.03	.06	.02
	{Double..	.03	.03	.06	.05	.10	.03
3. Newspapers {Publishers.....	{Weight..	10 ks.		10 ks.	10 ks.	1 ks.	
	{Rate....	.60		.80	2.00	.45	
	{Individuals.....	2 m.		3 m.	4 m.	.30	.02
4. Printed matter (all kinds).....	{Weight..	10 gr.		10 gr.	10 gr.	10 gr.	
	{Rate....	$\frac{1}{2}$ m.		$\frac{1}{2}$ m.	1 m.	3 m.	
5. Business papers.....	{Weight..	10 gr.		10 gr.	10 gr.	10 gr.	
	{Rate....	$\frac{1}{2}$ m.		$\frac{1}{2}$ m.	1 m.	3 m.	
6. Samples of merchandise and medicine.	{Weight..	20 gr.		20 gr.	20 gr.	20 gr.	
	{Rate....	.01		.01	.02	.05	
	{Loose or packages						
	{Attached to card..	5 m.		5 m.	.01	.01	

Explanation { gr. = grammes.
ks. = kilograms.
m. = millesimas.

In the above table the first column includes matter mailed at points on the island for delivery at other points on the island.

The second column includes local matter, or matter intended for delivery in the same town at which it is mailed.

The third column includes matter destined for points on the island of Ouba.

The fourth column includes matter destined for the peninsula, Balearic and Canary islands, and Spanish possessions in northern Africa.

The fifth column includes matter destined for the Philippine Islands and Fernando Po.

The sixth column includes international mail.

The registry fee was 15 cents, regardless of weight of package or destination, and the fee for insuring packages was 4 cents for each \$20 valuation thereof.

There was nothing in the Porto Rican service which corresponded to the free-delivery service of this department.

There were one or more persons employed to do general laborer's work in the principal offices, termed "ordenanzas," or orderlies or messengers, paid at the rate of \$180 per annum, who were required to perform such work as might be required of them in the offices, including the work of delivering telegrams, and who, in addition, had the monopoly of delivery of mail matter to the addressees, receiving from the addressees 1 centavo for each letter delivered, except in the case of persons or firms receiving large quantities of mail, where the ordenanza was paid a specified sum per month, sometimes as much as \$5. He was prohibited from delivering mail in the post-office or on the street.

This service was unsafe and unsatisfactory and was the occasion for considerable complaint.

There was lacking any system for delivery at the post-offices of letters to the addressees upon personal demand, except in the office at San Juan, where there were a few call boxes, for which a high rate was charged.

The regulations provided for three classes of boxes, and the annual rates charged for their use in San Juan were \$16, \$14, and \$12; in Ponce, Mayagüez, Humacao, and Arecibo, \$10, \$8, and \$6, and for their use in the other offices of the island, \$5, \$4, and \$3.

Except in San Juan and Guayama the committee found no call boxes.

At San Juan there were placed on the outside of the post-office building four boxes for the reception of mail matter, while three other boxes were placed at the principal points of the city, from which a clerk of the post-office gathered the mail thirty minutes before the hour set for its dispatch.

There was also in the post-office another box called the "buzon de alcance" from which the mail was taken ten minutes before the hour set for its dispatch, but matter mailed in this box required the payment of 1 centavo additional postage.

The system of furnishing stamp supplies in vogue in the United States did not prevail in Porto Rico. All stamps were furnished by the administrator of customs at the capital to the different custom-houses, viz: Playa Ponce, Playa Mayagüez, Arecibo, Punta de Santiago, Arroyo, Fajardo, and Aguadilla, and from these offices they were furnished to the stamp dealers, no stamps being sold at the post-offices except in the very small towns where there were no business houses, and in these instances the postmaster sold the stamps as the agent of the custom-house.

Persons who sold stamps furnished a bond to the nearest collector of customs to the amount of the stamps furnished. A commission of from 2 to 4 per cent on sales of stamps was allowed to agents.

Each time a new supply was ordered settlement was made for those previously supplied, there having been no form of monthly or quarterly reports.

The bond was made in triplicate—one copy for the central administration at San Juan, one for the collector of customs, and the third copy was retained by the maker.

It is needless to say that this system of furnishing stamps to the public was very unsatisfactory and productive of a good deal of complaint.

As the postmasters did not keep any postal supplies on sale, and as there was no money-order system in operation, no deposit of revenue was made, no depositories were named, and the regulations made no provision therefor.

The registry system corresponded in some respects to our own, in that a receipt was given to the sender by the postmaster. This was the only receipt he obtained however, except on the payment of an additional fee of two centavos, in which case a receipt from the addressee was obtained and forwarded to the sender. The registered articles (termed certificados) were sent from one office to another wrapped in an old newspaper and sealed with wax. It was not placed in the mail bag or mail box with the other mail, but given in the direct custody of the carrier. A mail bill was sent along with the carrier showing the number of registered packages and bags of mail in his charge. This bill was checked and signed at each intermediate point on the route, and finally at the terminal office, and was then returned to the office of origin.

These mail bills or lists did not show the destination of the registered articles, and it was practically impossible to trace a lost package for that reason.

An indemnity of \$10 was provided for in the regulations, but the testimony of reliable people, with whom the matter was discussed, was that it cost more to collect the indemnity than it amounted to, on account of the manner in which the claim had to be presented and the resulting delays, and that the Government would not admit responsibility for losses that were not occasioned through negligence on the part of mail messengers or postmasters. The postmaster received no fee for certifying a letter.

San Juan, Ponce, and Mayagüez were designated as exchange post-offices through which passed registered mails for and from points outside of Porto Rico.

There are but two railroads in the island, one in four sections; the first from San Juan by Santurce, Martin-Peña (no office), Bayamón, Toa Baja, Dorado, San Vicente (no office), Vega Baja, Manatí, Barceloneta, Camvalache (no office), Arecibo and Hatillo to Camuy, 100 kilometers or 62.12 miles in length, leaving San Juan at 6 a. m., arriving at Camuy by 9.56 a. m., and leaving Camuy at 3.08 p. m., and arriving at San Juan by 7.06 p. m.

The second, from San Juan, via Santurce, Martin-Peña (no office), and Rio Piédras, to Carolina, 22 kilometers, or 13.67 miles, in length, leaving San Juan at 5 p. m., arriving at Carolina at 6.05 p. m., and leaving Carolina at 7 a. m. and arriving at San Juan by 8.05 a. m.

The third, from Aguadilla, via Aguada, Rincón, Córscica (no office), Tres Hermanos (no office), Añasco, Playa-Mayagüez (no office), and Mayagüez, to Hormigueros, 55 kilometers, or 34.17 miles, in length, leaving Aguadilla at 4.45 p. m., arriving at Hormigueros by 7.27 p. m., and leaving Hormigueros at 5.33 a. m. and arriving at Aguadilla by 8.12 a. m.; and the fourth, from Yauco, via Guayanilla and Tallaboa, to Ponce, 35 kilometers, or 21.74 miles, in length, leaving Yauco at 6.30 a. m., arriving at Ponce by 8.08 a. m., and leaving Ponce at 4.30 p. m. and arriving at Yauco by 6.08 p. m.

The second road, connecting San Juan and Rio Piédras, is a narrow gauge, 3 feet between rails, and is used merely for suburban traffic, and carries no mail.

The service is performed daily.

This road has been built under a concession from the Spanish Government, the terms of which stipulated that a railroad should be constructed around the entire island and that it should be completed within a certain period of time, which period, it is understood, has terminated; but it is not known that any legal steps had been taken by the Spanish Government to declare the concession forfeited, and to assume control of the property.

One of the terms of concession was that the mail should be carried free of charge in a special car, together with the person or persons in charge of the mail, and it has been and is so being carried between San Juan and Camuy, between Aguadilla and Mayagüez and between Yauco and Ponce. The mail is not being carried on the section between Martin Peña and Carolina.

The road is a 3-foot gauge and of first class construction, but the rolling stock has been allowed to fall into disrepair. This is said to be owing to the fact, as it is stated, that for some time past the road has not been paying expenses.

The distances between post-offices and railroad stations are as follows: San Juan, 0.25 of a mile; Arecibo, 0.50 of a mile; Camuy, 0.67 of a mile; Aguadilla, 1 mile; Mayagüez, 1 mile; Yauco, 0.20 of a mile; Ponce, formerly 0.50 of a mile, now 0.25 of a mile, and Playa Ponce, 21.5 miles.

At these places mail messengers were employed to perform the service between the office and the station, at the rate of \$480 each per annum, except at Camuy, where he received \$450; Aguadilla, \$400, and Mayagüez, \$775, making a total of \$4,025 for this service. These mail messenger routes were let to the lowest bidder, and were for a period of two years. The contractor furnished a bond equal to 10 per cent of the amount of the contract.

Following is a description of the various land and water routes (star routes) of the island, together with recommendations of such changes as it is thought proper to make.

It was the general opinion of the people with whom the matter was discussed that the service, as it was designed by the postal authorities, was all that could be desired, the service being required to be performed daily under schedules making close connections at every terminal point; but that the efficiency, as it appeared on paper, was not attained in practice, the schedules at times requiring an impracticable rate of speed, and the condition of roads and weather also at times rendering it impossible to perform the service.

Placid streams will suddenly take the character of raging torrents, owing to rains in the mountains, and can not be forded with safety at such times for several hours, sometimes for days, according to the amount of rainfall.

ROUTE SAN JUAN TO PONCE,

via Santurce, Rio Piédras, Caguas, Cayey, Aibonito, Coamo, Juana Diaz, and Coto del Laurel, 130 kilometers (80.72 miles) and back, seven times a week by coach.

PRESSENT SCHEDULE.

Leaves San Juan daily at 11 a. m.;
Arrives at Ponce next day by 11 a. m.;
Leaves Ponce daily at 1 p. m.;
Arrives at San Juan next day by 9 p. m.

The mail lies over at Aibonito from five to six hours each way, or from 10 p. m. until 4 a. m. The Spanish contractor was Pedro Ubarri, of Rio Piedras, and his compensation was \$9,240 per annum, payable monthly at the rate of \$770.

Since August 6 or 7, 1898, on the occupation of the territory south of Aibonito by our troops, the Spanish contractor has carried the mail from San Juan to Aibonito only, and the service between Aibonito and Ponce has been paid for from that date by the military authorities at the rate of \$10 (American money) per diem. Aibonito and Cayey were occupied September 25, 1898; Caguas, October 6, 1898; Rio Piedras, October 13, 1898, and San Juan, October 18, 1898, which are the dates from which the United States should be responsible for payment for mail service between said points and Ponce.

	Kilometers.	Miles.
San Juan to Santurce.....	5	= 3.10
Santurce to Rio Piedras.....	7	= 4.24
Rio Piedras to Caguas	23	= 14.28
Caguas to Cayey	25	= 15.53
Cayey to Aibonito.....	20	= 12.42
Aibonito to Coamo.....	18	= 11.18
Coamo to Juana Diaz.....	20	= 12.42
Juana Diaz to Ponce.....	12	= 7.45

The road over which this route runs is the best on the island. It was constructed by the Spanish Government, is macadamized throughout to a width of 19 feet, with substantial bridges crossing ravines and streams except between Juana Diaz and Ponce, between which points six streams have to be forded, which streams are difficult and even dangerous to cross during heavy rains in the mountains. This road crosses three ranges of mountains, one of 2,910 feet and one of 2,250 feet altitude, and winds in and out through the mountains so as to secure the best grades possible, which, however, are very heavy in some places.

It is proposed that the schedule of this route be fixed so as to leave the terminal points early in the morning, say at 6 a. m., and to arrive at the other termini in fourteen hours, believing this to be practicable and best suited to the needs of the service. Also, that one additional trip be made weekly in close connection with the arrival of steamers at San Juan—say, leave there at 5 p. m., and returning arrive at San Juan by 12 m., with fourteen hours running time each way.

ROUTE RIO PIEDRAS TO FAJARDO,

via Carolina, Canóvanas, Rio Grande, and Luquillo, 54.50 kilometers (33.71 miles), and back, 11 kilometers (6.83 miles) to Carolina, 8.50 kilometers (5.28 miles) to Canóvanas, 8 kilometers (4.96 miles) to Rio Grande, 14.50 kilometers (9 miles) to Luquillo, 12.50 kilometers (7.64 miles) to Fajardo, seven times a week on horseback.

PRESENT SCHEDULE.

- Leave Rio Piedras daily at 12 noon;
- Arrive at Fajardo by 10.55 p. m. ;
- Leave Fajardo daily at 6 a. m. ;
- Arrive at Rio Piedras by 4.55 p. m.

The Spanish contractor was Juan B. Blanco, and his compensation \$1,719 per annum.

The schedule of this route connects with the schedule of route from

San Juan to Ponce, and, if the schedule of that route be changed, as proposed, this schedule will have to be changed as follows:

PROPOSED SCHEDULE.

Leave Rio Piedras daily at 7.30 a. m.;
Arrive at Fajardo by 6.30 p. m.;
Leave Fajardo daily at 6 a. m.;
Arrive at Rio Piedras by 5 p. m.

This road is good from Rio Piedras to near Rio Grande, but from there to Fajardo it is bad.

Fajardo was occupied September 29, 1898.

ROUTE CAGUAS TO HUMACAO,

via Gurabo, Juncos, and Las Piedras, 29 kilometers (17.99 miles) and back, seven times a week by horseback.

To Gurabo, 8.50 kilometers (5.28 miles); to Juncos is 6.50 kilometers (4.03 miles); to Las Piedras, 8 kilometers (4.96 miles), and to Humacao, 6 kilometers, or 3.72 miles.

Humacao was occupied September 22, 1898.

This road is very bad and is almost impassable for any kind of vehicle, and can only be traveled with any degree of success on horseback. Five streams have to be forded, there being no bridges on the road.

PRESENT SCHEDULE.

Leave Caguas daily at 3.30 p. m.;
Arrive at Humacao by 10.20 p. m.;
Leave Humacao daily at 6 a. m.;
Arrive at Caguas by 12.50 p. m.

This schedule connects with that on the route from San Juan to Ponce, connecting with and receiving mails from both San Juan and Ponce the same day. As the mail from Ponce for Humacao will be dispatched via Guayama and Yabucoa under proposed schedules, we deem it unnecessary to have the carrier wait at Caguas for the mail from Ponce, and therefore recommend the following schedule:

PROPOSED SCHEDULE.

Leave Caguas daily at 11 a. m.;
Arrive at Humacao by 5 p. m.;
Leave Humacao daily at 3.30 a. m.;
Arrive at Caguas by 9.30 a. m.

ROUTE CAYEY TO GUAYAMA.

There are no intermediate offices on this route, and the distance is 26 kilometers (16.15 miles), the service being performed seven times a week each way on horseback.

PRESENT SCHEDULE.

Leave Cayey daily at 6.25 p. m.;
Arrive at Guayama by 9.25 p. m.;
Leave Guayama daily at 7.30 a. m.;
Arrive at Cayey by 1.30 p. m.

The contractor was Gabriel Capo, of Guayama, and his compensation was \$1,200 per annum.

Cayey was occupied by our forces September 25, 1898, and Guayama, August 4, 1898.

The schedule should be changed, so as to leave Cayey at about 2 p. m., on arrival of mail from San Juan and Ponce.

This road is well constructed, and of the same character as the military road from San Juan to Ponce, but with a very heavy grade from Guayama. Service is not now being performed.

ROUTE PONCE TO GUAYAMA,

via Santa Isabel and Salinas, 62 kilometers (38.50 miles), and back; 26 kilometers (16.15 miles) to Santa Isabel, 19 kilometers (11.80 miles) to Salinas, and 17 kilometers (10.56 miles) to Guayama. The service is performed seven times a week by coach.

PRESENT SCHEDULE.

Leave Ponce daily at 4.25 a. m.;
Arrive at Guayama by 1.45 p. m.
Leave Guayama daily at 4 p. m.;
Arrive at Ponce next day by 1.25 a. m.

The contractor was Francisco Rovira, and his compensation was \$2,800 per annum.

The above service has been terminated, and temporary service between Ponce and Santa Isabel is being performed daily, the carrier being paid by the alcalde of Santa Isabel, while service from Guayama to Ponce, three times a week, is being performed by carrier provided by the military authorities, at a cost of \$140 per month (Porto Rican money), who also supplies Salinas. The road is very bad, being crossed by several unbridged streams, difficult to ford after rains, and in places runs close to the sea, which washes over it in heavy weather, rendering traveling dangerous at such times.

The schedule of this route should be:

Leave Ponce daily at 6 a. m.;
Arrive at Guayama by 6 p. m.
Leave Guayama daily at 6 a. m.;
Arrive at Ponce by 6 p. m.

ROUTE GUAYAMA TO HUMACAO,

via Arroyo, Patillas, Maunabo, and Yabucoa, 55 kilometers (34.14 miles), and back, seven times a week by horseback.

To Arroyo, 8 kilometers (4.96 miles); to Patillas, 10 kilometers (6.21 miles); to Maunabo, 14 kilometers (8.69 miles); to Yabucoa, 9 kilometers (5.59 miles), and to Humacao, 14 kilometers (8.69 miles).

The contractor was the municipality of Humacao, and the compensation \$3,000 per annum. Service is now being provided by the alcaldes of the towns, except between Maunabo and Patillas, which is being provided by the army.

PRESENT SCHEDULE.

Leave Humacao daily at 5 a. m.;
Arrive at Guayama by 3.50 p. m.
Leave Guayama daily at 1.55 p. m.
Arrive at Humacao next day by 12.45 a. m.

PROPOSED SCHEDULE.

Leave Humacao daily at 6 a. m.;
Arrive at Guayama by 5 p. m.
Leave Guayama daily at 6 a. m.;
Arrive at Humacao by 5 p. m.

This road is very bad for any kind of vehicle whatever, and between Maunabo and Yabucoa a mountain has to be crossed by a mere bridle path, prohibiting the passage of any kind of vehicle, and renders a slow schedule absolutely necessary, and the performance of the service during daylight.

ROUTE HUMACAO TO FAJARDO,

via Punta de Santiago, Punta Naguabo, Naguabo, and Ceiba.

To Punta Santiago, 6 kilometers (3.72 miles); to Playa Naguabo, 6 kilometers (3.72 miles); to Naguabo, 5 kilometers (3.10 miles); to Ceiba, 15 kilometers (9.31 miles); to Fajardo, 11 kilometers (6.83 miles); a total distance of 43 kilometers (26.68 miles) and back, seven times a week on horseback.

The contractor is Francisco Alvarez Gonsales, and his compensation is \$990 per annum.

PRESENT SCHEDULE.

Leave Humacao daily at 10 p. m.;
Arrive at Fajardo by 5.55 a. m.;
Leave Fajardo daily at 11.05 p. m.;
Arrive at Humacao by 6.55 a. m.

PROPOSED SCHEDULE.

Leave Humacao daily at 6 a. m.;
Arrive at Fajardo by 2 p. m.;
Leave Fajardo daily at 6 a. m.;
Arrive at Humacao by 2 p. m.

The road is bad, with three unbridged streams to cross, while a circuit through the surf has to be made to avoid two other streams.

ROUTE PONCE TO PLAYA PONCE,

3 kilometers (1.86 miles) and back, thirteen times a week.

This service was formerly a part of the routes from San Juan and Guayama, but as the main office is now located in the city of Ponce the service performed should be made a separate route and be performed at hours conforming to the needs of the business interests of Ponce and the Playa. Playa Ponce is the port of Ponce, and the custom-house and more important wholesale business houses are located there. There is telephonic connection between the two towns. Mail should leave Ponce at 8 a. m. and 3.30 p. m., and leave the Playa at 9 a. m. and 4.30 p. m., thirty minutes running time to be allowed each way, the Sunday trip to be in the morning.

ROUTE PONCE TO ARECIBO,

by Guaraguan, Adjuntas, and Utuado.

To Guaraguan, 18 kilometers (11.18 miles); to Adjuntas, 12 kilometers (7.45 miles); to Utuado, 30 kilometers (18.63 miles), and to Arecibo, 15 kilometers (9.32 miles); total, 75 kilometers (46.59 miles) and back, seven times a week, by wagon to Adjuntas and by horseback from Adjuntas to Arecibo.

The contractors are Leopold B. Strube, Arecibo to Adjuntas, at \$1,095 per annum; Eustaquio Uallazo, Utuado to Adjuntas, at \$100, and Santiago Alvarez, Adjuntas to Ponce, at \$600 per annum; total, \$1,795 per annum.

Arecibo was occupied by our forces October 9, 1898; Utuado, August 30, 1898, and Adjuntas, August 30, 1898.

PRESENT SCHEDULE.

Leave Ponce daily at 5 a. m.;
Arrive at Arecibo next day by 12.15 p. m.;
Leave Arecibo daily at 9.30 a. m.;
Arrive at Ponce next day by 12 m.

In going from Ponce, mail lies over at Utuado from 6.10 p. m. until 6 a. m., and in going from Arecibo mail lies over at Adjuntas from 9.35 p. m. until 5 a. m.

The road is good between Ponce and Adjuntas, but very bad between Adjuntas and Arecibo. That portion between Adjuntas and Utuado having been recently constructed by the military authorities to meet military necessities. Several serious landslides have recently occurred on this portion of the road. The committee recommend that three routes be substituted for this route, one from Ponce via Guaraguan to Adjuntas on a schedule to leave Ponce daily at 1 p. m. and arrive at Adjuntas by 8 p. m., and returning leave Adjuntas at 5 a. m. and arrive at Ponce by 12 m. One from Utuado to Arecibo, 15 kilometers (9.31 miles) and back, seven times a week, as follows:

Leave Utuado daily at 5.30 a. m.;
Arrive at Arecibo by 8.30 a. m.;
Leave Arecibo daily at 10 a. m.;
Arrive at Utuado by 1 p. m.

The other, from Adjuntas to Utuado, 30 kilometers (18.63 miles) and back, seven times a week, with a schedule as follows:

Leave Adjuntas at 6.30 a. m.;
Arrive at Utuado by 12.30 p. m.;
Leave Utuado at 1.30 p. m.;
Arrive at Adjuntas by 7.30 p. m.

It is believed that the service three times a week on the last-named route will be sufficient for the transportation of the small quantity of mail which will in all probability pass between these points.

ROUTE YAUCO TO MAYAGÜEZ.

via Sábana Grande, 17 kilometers (10.56 miles); San German, 7 kilometers (4.34 miles); Cabo Rojo, 8 kilometers (4.96 miles); and Mayagüez, 12 kilometers (7.33 miles) a total distance of 44 kilometers (27.19 miles) and back seven times a week on horseback.

The contractor is Feliz Ortiz Renta, and his compensation is \$2,988 per annum.

PRESENT SCHEDULE.

Leave Yauco daily at 6.38 p. m.;
Arrive at Mayagüez by 2.38 a. m.;
Leave Mayagüez daily at 7.22 p. m.;
Arrive at Yauco by 3.22 a. m.

Mayagüez was occupied by our forces on August 12, 1898.

This route also extends to Playa Mayagüez, 1 kilometer (0.62 mile), but as the post-office at that point was closed by authority of the alcalde about September 15, 1898, the route has been terminated at Mayagüez.

The road between Mayagüez and Cabo Rojo is excellent, but for the remainder of the distance it is very bad and almost impassable except

on horseback. Extra trips to carry the heavy mail to and from the Eleventh Infantry, stationed at Mayagüez, have been made with ox carts on a schedule of about twenty-four hours each way. We recommend that the schedule be extended so as to arrive at Mayagüez at 5 a. m., in time to connect with the mail train at 6 a. m., and returning to arrive at Yauco at 6 a. m., in time to connect with the mail train at 6.30 a. m.

This service was performed under two contracts, one from Mayagüez to San German, the other from San German to Yauco.

It is an important route, connecting the railroad running from Ponce to Yauco with the railroad from Mayagüez to Aguadilla, and is a part of the through route from Ponce to San Juan around the western end of the island. This last-named railroad extends as far south as Hormigueros, but as that office is of very little importance, this committee does not deem it advisable to recommend that the railroad service be extended beyond Mayagüez nor that it be embraced in the Mayagüez and Yauco route, because of its unimportance and because it is some distance (about 1 mile) from the road now traveled by the mail.

ROUTE CAMUY TO AGUADILLA,

via Quebradillas and Isabela.

To Quebradillas, 11 kilometers (6.83 miles); to Isabela, 12 kilometers (7.45 miles); and to Aguadilla, 17 kilometers (10.56 miles), a total distance of 40 kilometers, or 24.84 miles and back, seven times a week by coach.

Francisco Escalona, agent, is the contractor, and the compensation is \$3,000 per annum.

PRESSENT SCHEDULE.

Leave Camuy daily at 10.19 a. m.;
Arrive at Aguadilla by 4 p. m.;
Leave Aguadilla daily at 8.27 a. m.;
Arrive at Camuy by 2.15 p. m.

This is a part of the through route from San Juan to Ponce by railroad, and is therefore of importance. Camuy was occupied by our forces September 29, 1898.

The road is extremely bad, but the present schedule is made with tolerable regularity, and it is necessary to continue it on the same schedule.

ROUTE AGUADILLA TO UTUADO,

via Moca, San Sebastian, and Lares; and

ROUTE AGUADILLA TO ARECIBO,

via Lares and Pajuil (no office).

Aguadilla to Moca, 7 kilometers (4.34 miles); to San Sebastian, 15 kilometers (9.30 miles); to Lares, 16 kilometers (9.93 miles); to Utuado, 42 kilometers (26.09 miles); total, 80 kilometers (49.67 miles). Distance, Lares to Arecibo, 50 kilometers (31.06 miles). Total distance, 130 kilometers (80.73 miles).

The road from Aguadilla to within 2 miles of San Sebastian is macadamized. The remainder of the road—that is, from 2 miles west of San Sebastian to Utuado, on the lower branch, and Arecibo, on the upper branch—can only be traveled on horseback, and then with the greatest difficulty.

PRESENT SCHEDULE.

Leave Aguadilla daily at 9 a. m.;
 Arrive at Lares by 6 p. m.;
 Leave Lares daily at 5 a. m.;
 Arrive at Arecibo by 1.30 p. m.;
 Leave Arecibo daily at 10 a. m.;
 Arrive at Lares by 6 p. m.;
 Leave Lares daily at 5 a. m.;
 Arrive at Aguadilla by 2.10 p. m.;
 Leave Lares daily at 5 a. m.;
 Arrive at Utuado by 4 p. m.;
 Leave Utuado at 5 a. m.;
 Arrive at Lares by 4 p. m.

As the road is in such a condition as to render travel practically impossible, and the quantity of mail during the unsettled condition of affairs very small, the committee deems it unnecessary that there should be any direct service between Lares and Arecibo, and between Lares and Utuado, and recommends, therefore, that it be dispensed with, the means of communication via Aguadilla being deemed sufficient.

ROUTE MANATÍ TO UTUADO,

via Ciales, Cialitos, and Jayuya, 56 kilometers (34.57 miles) and back seven times a week.

Manatí to Ciales, 12 kilometers (7.45 miles); to Cialitos, 12 kilometers (7.45 miles); to Jayuya, 20 kilometers (12.22 miles), and to Utuado 12 kilometers (7.45 miles).

It appears that this route was advertised, but for some reason it was never let. It is thought that the lowest bid received was considered too high, and service was provided only from Manatí via Ciales to Cialitos, 24 kilometers (14.90 miles). It was performed by two carriers, at a cost of \$720 per annum. The amount of postal business done at Ciales during the year ended December 31, 1897, was \$242.46, and the telegraphic business \$275.60, while the postmaster's salary was \$500 per annum, with an ordenanza, or messenger, at \$180. The town is said to have a population of 4,000, and is in the midst of a section of the country producing coffee and valuable woods.

The reports indicate that no postal business was done at Cialitos, but the postmaster received a salary of \$75 per annum. It was not a telegraphic station.

It is recommended that a route be established, Manatí to Ciales, a distance of 12 kilometers (7.45 miles), and back seven times a week, under the following schedule:

Leave Manatí daily, at 9.30 a. m.;
 Arrive at Ciales, by 11.30 a. m.;
 Leave Ciales daily, at 6 a. m.;
 Arrive at Manatí, by 8 a. m.

It is also recommended that Cialitos be given special supply pending satisfactory returns of business.

Jayuya is a town 11 kilometers (6.83 miles) southeast of Utuado, and is an important point in the coffee and tobacco producing region, the tobacco being claimed to be superior to any produced in the island.

The postmaster at this point receives a salary of \$75 per annum and the postal business during the year ended December 31, 1897, amounted to \$269.42. The office was supplied from Utuado by a carrier furnished by the municipal authorities of Jayuya.

It is recommended that a route be established for its supply from

Utuado to Jayuya, 11 kilometers (6.83 miles), and back seven times a week under the following schedule:

Leave Utua

do daily, at 2 p. m. ;
Arrive at Jayuya by 4 p. m. ;
Leave Jayuya daily, at 4.30 p. m. ;
Arrive at Utua

do by 6.30 p. m.

ROUTE PUNTA SANTIAGO TO ISLA DE VIÉQUES;

15 kilometers (9.32 miles) and back, three times a week, by sailboat.

The contractor is Antonio Zaragoza, and his compensation is \$900 per annum.

PRESENT SCHEDULE.

Leave Punta Santiago Tuesday, Thursday, and Saturday at 8.15 a. m. ;
Arrive at Isla de Viéques by 12.50 p. m. ;
Leave Isla de Viéques Monday, Wednesday, and Friday at 8 a. m. ;
Arrive at Punta Santiago by 12.35 p. m.

Punta Santiago, the base of supply for Isla de Viéques, is about 4 miles from Humacao, of which town it is the port, having within its precincts the custom-house of the Humacao district. The Island of Viéques (post-office and island having the same name) has a population of about 5,000. Its principal industries are the raising of horses and the production of sugar and tobacco. The postmaster receives a salary of \$110 per annum, and the postal receipts for the year ended December 31, 1897, amounted to \$264.61.

The island is now garrisoned by a company of United States infantry and was occupied September 19, 1898.

The present contractor has performed the service for years and is desirous of continuing the service. He is the owner of two schooners, one of 28 tons, the other of 80 tons. The smaller vessel is used in the service ordinarily, and is apparently sound and seaworthy. The other boats which were seen in the bay at the time of the visit of two members of the committee were small, single-masted, open boats, called "goletas," rigged with a jib and triangular sail. It appears that Zaragoza is the only person in that vicinity sufficiently well equipped to properly perform the service. He has made a proposition to perform the service for the sum of \$2, American money, per round trip, which proposition is filed herewith. After the receipt of the proposal referred to, the postal agent at Humacao was instructed by a member of the committee to say to the contractor that he should continue the service, and that the question of the payment for service performed since the time of the American occupation of Viéques would be laid before the Department.

ROUTE VIÉQUES TO CULEBRA,

12 kilometers (7.45 miles) and back, three times a week.

PRESENT SCHEDULE.

Leave Viéques Tuesday, Thursday, and Saturday at 2 p. m. ;
Arrive at Culebra by 4 p. m. ;
Leave Culebra Monday, Wednesday, and Friday at 4 a. m. ;
Arrive at Viéques by 7 a. m.

Six hundred dollars (\$600) per annum was assigned by the Government as the expense for this service.

The carrier, Pedro Marqués, has forwarded a statement, however, to the effect that he receives \$49.16 per month for his service, which would

be at the rate of \$589.92 per annum. He also states that he receives \$16 per month for services between Culebra and Culebrita, but it is not known by whom this sum is paid, since it does not appear that it was provided for by the Government.

The annual report of the Government gives Culebra and Culebrita as post-offices, but the committee has no information as to any postal business having been done at those offices or as to the salaries of the postmasters.

This completes the account of the land and water routes of the island.

There were a number of offices which were not located on any route under contract, but which were authorized to receive supplies from designated offices on regular routes. This service was not paid for by the general administration, but by the local authorities, usually at the rate of \$15 to \$20 per month.

A statement is herewith given of these offices and recommendations made as to their future supply.

Otaño is authorized to receive supplies from Bayamón, 7 kilometers (4.42 miles) distant. The postal receipts for the year ended December 31, 1897, were \$23.20, and the salary of the postmaster was \$75 per annum. This office is situated at the end of a spur track of the railroad and is connected with San Juan by ferry, a distance of about 0.75 of a mile. It is suggested that this office be given special supply from San Juan pending further returns of business.

Toa-Alta is 8 kilometers (4.96 miles) from Bayamón, and Naranjito is 12 kilometers (7.45 miles) from Toa-Alta. Both offices are supplied from Bayamón.

Postal business at Toa-Alta for the year ended December 31, 1897, \$245.57; telegraphic business for the same period, \$184.80. The postmaster's salary was \$500 per annum.

The postal business at Naranjito was \$114.84. There was no telegraphic business. The salary of the postmaster at this office was \$75 per annum. A route is recommended from Bayamón via Toa-Alta to Naranjito, 20 kilometers (12.41 miles) and back seven times a week under the following schedule:

Leave Bayamón daily at 8 a. m.;
Arrive at Naranjito at 11 a. m.;
Leave Naranjito daily at 12 m.;
Arrive at Bayamón by 3 p. m.

Vega-Alta is 7 kilometers (4.42 miles) from Vega-Baja, and Corozal is 6.50 kilometers (4.03 miles) from Vega-Alta, and Moróvis is 8 kilometers (4.96 miles) from Corozal, the three offices being supplied from Vega-Baja. The postal business at Vega-Alta was \$216.52 for the year ended December 31, 1897; there was no telegraphic business. The postmaster's salary was \$110. The postal business at Corozal was \$128.71, and the telegraph business \$171.74. The postmaster's salary was \$500 per annum, with \$180 for clerk hire and \$192 for rent. The postal business at Moróvis was \$57.87, and the telegraph business \$234.48. The postmaster's salary was \$500 per annum, with \$180 for clerk hire.

We recommend a route from Vega-Baja via Vega-Alta and Corozal to Moróvis, 21.50 kilometers (13.41 miles) and back, seven times a week, under the following schedule:

Leave Vega-Baja daily at 8.30 a. m.;
Arrive at Moróvis by 12.30 p. m.;
Leave Moróvis daily at 1.30 p. m.;
Arrive at Vega-Baja by 4.30 p. m.

Florida is an office near Barceloneta, in a southerly direction; distance not known. There is no report of any business done at this office, but the postmaster's salary is stated to be \$75 per annum.

It is recommended that **Florida** be given special supply from **Barceloneta** pending returns of business.

Guaynabo is an office in a southeasterly direction from **Bayamón**; distance not known. There are no returns of business, but the postmaster's salary is \$75 per annum. It is recommended that this office be given special supply from **Bayamón** pending returns of business.

Trujillo-Alto is an office authorized to receive supply from **Rio Piedras**. The postal business for the year ended December 31, 1897, amounted to \$49.56. There was no telegraphic business. The postmaster's salary was \$75 per annum. It is four kilometers (2.58 miles) from **Carolina**, over a fair road, and it is recommended that it be given special supply from **Carolina** pending better returns of business.

Loiza receives supply from **Canóvanas**, 8 kilometers (4.97 miles) south, over a fair road. The postal business for the year ended December 31, 1897, was \$86.32. There was no telegraphic business. The postmaster's salary was \$75 per annum.

It is recommended that a route be established from **Loiza** to **Canóvanas**, as follows:

Leave **Loiza** daily, except Sunday, at 10 a. m.;
Arrive at **Canóvanas** by 11.30 a. m.;
Leave **Canóvanas** daily, except Sunday, at 12.30 p. m.;
Arrive at **Loiza** by 2 p. m.

San Lorenzo is 10 kilometers (6.21 miles) from **Cáguas**, from which point it receives supplies. The road is very bad. The postal business at **San Lorenzo** for the year ended December 31, 1897, amounted to \$153.54, and the telegraphic business \$255.21. The postmaster's salary was \$500 per annum, with an allowance of \$180 for clerk hire.

We recommend a route from **Cáguas** to **San Lorenzo** and back daily, under the following schedule:

Leave **Cáguas** daily at 10 a. m.;
Arrive at **San Lorenzo** by 12 m.;
Leave **San Lorenzo** daily at 1 p. m.;
Arrive at **Cáguas** by 3 p. m.

Aguas-Buenas was authorized to receive supplies from **Cáguas**. The postal business for the year ended December 31, 1897, amounted to \$344.06, and the telegraphic business \$308.28. The postmaster's salary was \$500 per annum, with an allowance of \$180 for clerk hire and \$240 for rent.

Comerio was authorized to receive supplies from **Aibonito**.

The postal business at this office for the year ended December 31, 1897, amounted to \$276.05, and the telegraphic business \$308.50. The postmaster's salary was \$500 per annum, with an allowance of \$180 for clerk hire and \$264 for rent.

Aguas-Buenas is 9 kilometers (5.58 miles) and **Comerio** is 10 kilometers (6.21 miles) from **Aguas-Buenas**.

We recommend the establishment of a route from **Cáguas**, via **Aguas-Buenas**, to **Comerio**, 19 kilometers (11.79 miles), and back, seven times a week, under the following schedule:

Leave **Cáguas** daily at 10 a. m.;
Arrive at **Comerio** by 12.30 p. m.;
Leave **Comerio** daily at 1.30 p. m.;
Arrive at **Cáguas** by 4 p. m.

The road is in fair condition, a portion of it between Oáguas and Aguas-Buenas being macadamized.

Cidra was authorized to receive supplies from Oáguas. The postal business for the year ended December 31, 1897, amounted to \$74.79. There was no telegraphic business. The postmaster's salary was \$500 per annum, with an allowance of \$180 for clerk hire. It is evident that Cidra has decreased in importance as a post-office, and that it should have been reclassified. It is located in a very fertile and productive country in the La Plata Valley.

We recommend the establishment of a route from Cayey to Cidra, 8 kilometers (4.97 miles), six times a week, under the following schedule:

Leave Cayey daily, except Sunday, at 2 p. m.;
Arrive at Cidra by 3 p. m.;
Leave Cidra daily, except Sunday, at 10.30 p. m.;
Arrive at Cayey by 12 midnight.

The road is fair, but upgrade to Cayey.

Barranquitas was authorized to receive supply from Aibonito, 8 kilometers (4.97 miles) distant.

The postal business for the year ended December 31, 1897, was \$97.78, and the telegraphic business \$205.07. The postmaster's salary was \$500 per annum, with an allowance of \$180 for clerk hire.

Barros was authorized to receive supply from Aibonito. It is 12 kilometers (7.45 miles) from Barranquitas.

The postal business for the year ended December 31, 1897, was \$245.45, and the telegraphic business \$386.19. The postmaster's salary was \$500 per annum, with an allowance of \$180 for clerk hire.

We recommend the establishment of a route from Aibonito via Barranquitas to Barros, 20 kilometers (12.42 miles), seven times a week, under the following schedule:

Leave Aibonito daily at 3 p. m.;
Arrive at Barranquitas by 7 p. m.;
Leave Barranquitas daily at 7 a. m.;
Arrive at Aibonito by 11 a. m.

Villalba Arriba was authorized to receive supply from Juana Diaz, distance 10 kilometers (6.21 miles). It is in a northeast direction from Juana Diaz.

The postal business for the year ended December 31, 1897, was \$68.10, and the postmaster's salary \$75 per annum.

We recommend the establishment of a route from Juana Diaz to Villalba Arriba, six times a week, under the following schedule:

Leave Juana Diaz daily, except Sunday, at 8 a. m.;
Arrive at Villalba Arriba by 10 a. m.;
Leave Villalba Arriba daily, except Sunday, at 11 a. m.;
Arrive at Juana Diaz by 1 p. m.

Peñuelas was authorized to receive supply from Tallaboa, 5 kilometers (3.10 miles) distant. The postal business for the year ended December 31, 1897, was \$215.58, and the telegraphic business \$219.59. The postmaster's salary was \$500 per annum, with an allowance of \$180 for clerk hire and \$120 for rent.

We recommend the establishment of a route from Peñuelas to Tallaboa, seven times a week, under the following schedule:

Leave Peñuelas daily at 6.30 a. m.;
Arrive at Tallaboa by 7.15 a. m.;
Leave Tallaboa daily at 5.30 p. m.;
Arrive at Peñuelas by 6.15 p. m.

Gúanica was authorized to receive supply from Yauco, 7 kilometers (4.35 miles) distant.

The postal business for the year ended December 31, 1897, was \$64.98. There was no telegraphic business. The postmaster's salary was \$75 per annum.

We recommend the establishment of a mail route from Gúanica to Yauco, six times a week, under the following schedule:

Leave Gúanica daily, except Sunday, at 4.45 p. m. ;
Arrive at Yauco by 5.45 p. m. ;
Leave Yauco daily, except Sunday, at 6.30 p. m. ;
Arrive at Gúanica by 7.30 p. m.

A company of United States engineers is located at this point, which is the port of Yauco.

Lajas was authorized to receive supply from San German, 7 kilometers (4.34 miles) distant, in a northerly direction. The postal business for the year ended December 31, 1897, was \$82.25. There was no telegraphic business. The postmaster's salary was \$75 per annum.

We recommend the establishment of a route from San German to Lajas on the following schedule:

Leave San German daily, except Sunday, at 6 a. m. ;
Arrive at Lajas by 7 a. m. ;
Leave Lajas daily, except Sunday, at 8 a. m. ;
Arrive at San German by 9 a. m.

Hormigueros was authorized to receive supply from Mayagüez, 9 kilometers (5.58 miles) distant. The postal business for the year ended December 31, 1897, was \$43.52 per annum. It was not a telegraphic office. The postmaster's salary was \$75 per annum.

We recommend that Hormigueros be given special supply from Mayagüez pending the showing of a better postal business.

Maricao was authorized to receive supply from Mayagüez, 15 kilometers (9.32 miles) distant, in a westerly direction. The postal business for the year ended December 31, 1897, was \$277.45, and the telegraphic business, \$583.20. The postmaster's salary was \$500 per annum, with an allowance of \$180 for clerk hire.

We recommend the establishment of a route from Mayagüez to Maricao, seven times a week, on the following schedule:

Leave Mayagüez daily at 7 a. m. ;
Arrive at Maricao by 10 a. m. ;
Leave Maricao daily at 3 p. m. ;
Arrive at Mayagüez by 6 p. m.

This town is located in the midst of a fine coffee-producing country.

Las Marias was authorized to receive supply from Mayagüez, 20 kilometers (12.42 miles) distant, in a northwesterly direction. It is located in a fine coffee section.

The postal business for the year ended December 31, 1897, was \$216.12, and the telegraph business, \$318.52. The postmaster's salary was \$500 per annum.

We recommend the establishment of a route from Mayagüez to Las Marias, daily, on the following schedule:

Leave Mayagüez daily at 7 a. m. ;
Arrive at Las Marias by 11 a. m. ;
Leave Las Marias daily at 1 p. m. ;
Arrive at Mayagüez by 5 p. m.

This road is very good as far as the Marias River, but beyond that point it is mountainous and very bad. The country produces coffee and tobacco.

Aldea Sanz was authorized to receive supply from Mayagüez. It is situated in a northeasterly direction, but the exact distance is not known. The postal business for the year ended December 31, 1897, was \$23.65, and the postmaster's salary \$75 per annum.

We recommend that it be given a special supply until sufficient business is developed to justify a regular route.

Consideration of the business transacted at many of these offices makes it doubtful whether service should be provided for every day of the week, but as service has generally been furnished on Sunday, whether paid for by the government or by the municipal authorities, that frequency has been accepted by this committee, and is submitted on that basis. It is to be determined by the Department whether this frequency shall be continued or the routes established on a basis which will abandon the Sunday service, except on the few regular contract routes now in operation, and leave the question of Sunday service open, and where needed to be petitioned for as would be required for any new service. It is to be said, in passing, that the receipt of Sunday mails at an office does not compel the observance of the usual week-day office hours, as a limited number of hours will accommodate the business and private interests.

The character of the roads in Porto Rico and the heavy rains which prevail for one-half of each year render travel both difficult and dangerous, and the regular connection of mail routes practically an impossibility. The principal towns are located on the coast and the most feasible means of communication is by water. No regular lines of coast steamers are maintained at the present time, but it is our opinion that an endeavor should be made to secure such facilities, and we are confident that the advertisement for bids for the performance of mail service around the island by steamboat will be met by suitable proposals.

The distance from San Juan to Ponce, the two principal towns, is about 140 miles around either end of the island, and can be made in one day by a suitable steamer of 10 knots per hour, stopping at the principal towns. A trip around the entire island can be made by one steamer three times per week, the route to be stated from San Juan, via Arecibo, Aguadilla, Mayagüez, Ponce, Arroyo, Punta de Santiago, Playa-Naguabo, Isla de Viéques, Fajardo, and Luquillo, to San Juan, three times per week, distance about 290 miles, on the following schedule:

Leave San Juan Monday and Friday, via Mayagüez, at 6 a. m.;
Leave Ponce Tuesday and Saturday, via Mayagüez, at 6 a. m.
Leave San Juan Wednesday, via Fajardo, at 6 a. m.;
Leave Ponce Thursday, via Fajardo, at 6 a. m.

It being impracticable to come to a dock at any of the above ports, a requirement should be inserted that the contractor shall receive and deliver the mails on shore. It is believed that such a service will supplement the star service and make it possible to rearrange it on a more economical basis. While the committee does not specifically recommend the establishment of the steamboat service, these facts are submitted for the information and consideration of the Department.

The information obtained by the committee as to the receipts and expenditures for the entire service in Porto Rico is both interesting and instructive. The total revenues of both telegraphic and postal services for the year ended December 31, 1897, were \$197,083.01, and the expenses \$286,620, leaving a deficit of \$89,536.99, or 31 per cent. The salaries of postmasters and allowances for clerks amounted to \$108,340 per annum, or 38 per cent of the expenses; the star-route service to \$33,670, or 12 per cent of the expenses; the transatlantic

and intercolonial mail service to \$79,406, or 28 per cent of the expenses. The San Juan office furnished \$76,994.60, or 39 per cent of the revenue, and cost \$23,690, or 8 per cent of the expenses.

The second following table gives the different items in detail, and is preceded by a table showing total receipts and expenses of each office on the island.

Office.	Receipts.			No. of clerks.	Total expense of office
	Postal.	Tele-graphic.	Total.		
Adjuntas.....	\$210.30	\$919.79	\$1,130.09	1	\$680.00
Aguada.....	70.96		70.96		110.00
Aguadilla.....	1,824.39	2,598.04	4,422.43	3	3,880.00
Aguas-Buenas.....	244.96	308.28	553.24	1	920.00
Aibonito.....	368.17	721.53	1,089.70	1	930.00
Aldoa Sans.....	23.63		23.63		75.00
Añasco.....	398.30	315.96	714.26	1	680.00
Arecibo.....	5,716.35	3,361.46	9,077.81	3	368.00
Arroyo.....	563.97	852.74	1,416.71	2	2,098.00
Barceloneta.....	209.10	411.44	620.54		500.00
Barranquitas.....	97.78	205.07	302.85	1	680.00
Barros.....	245.42	386.19	631.61	1	680.00
Bayamón.....	503.03	459.02	962.05	1	1,230.00
Cabo Rojo.....	509.58	470.12	979.70	1	680.00
Cáguas.....	1,180.56	1,330.44	2,511.00	3	2,430.00
Camuy.....	425.34	711.41	1,136.75	1	1,870.00
Camóvanas.....	92.72	61.76	154.48		500.00
Carolina.....	307.53	258.54	566.07	1	920.00
Cataño.....	23.20		23.20		75.00
Cayey.....	1,055.14	682.24	1,737.38	1	1,328.00
Ceiba.....	80.40	239.53	319.93		500.00
Ciales.....	246.42	275.60	522.02	1	680.00
Cialitos.....					75.00
Cidra.....	74.79		74.79	1	680.00
Coamo.....	1,107.80	1,467.78	2,575.58	1	680.00
Comerio.....	226.05	308.50	534.55	1	944.00
Corozal.....	128.71	171.64	300.35	1	872.00
Coto del Laurel.....	73.87		73.87		75.00
Culebra.....					
Culebrita.....					
Dorado.....	98.59		98.59		75.00
Fajardo.....	1,171.51	1,095.23	2,266.74	2	2,098.00
Florida.....					75.00
Güánica.....	64.98		64.98		75.00
Guanaguan.....	26.92		26.92		75.00
Guayama.....	2,107.24	2,752.83	4,860.07		2,098.00
Guayanilla.....	291.66	411.61	703.27	1	680.00
Guaynabo.....					
Gurabo.....	146.06		146.06		110.00
Hatillo.....	94.36		94.36		110.00
Hormigueros.....	43.52		43.52		75.00
Humacao.....	3,256.64	2,649.78	5,906.42	5	6,100.00
Isabela.....	196.91	197.42	394.33		500.00
Isla de Viéques.....	264.61		264.61		110.00
Jayuya.....	269.42		269.42		75.00
Juana Díaz.....	680.16	611.52	1,291.68	1	680.00
Juncos.....	173.71	336.31	510.02	1	680.00
Lajas.....	82.25		82.25		75.00
Las Marias.....	216.12	318.52	534.64	1	680.00
Las Piedras.....	168.52	249.01	417.53	1	680.00
Lares.....	1,218.70	1,101.04	2,319.74	1	680.00
Leiza.....	88.39		88.39		75.00
Loquillo.....	160.07	220.74	380.81	1	680.00
Manatí.....	1,184.82	769.33	1,954.15	1	1,420.00
Maricao.....	277.45	583.20	860.65	1	680.00
Maunabo.....	257.58	335.83	593.41	1	680.00
Manreyes.....					75.00
Mayaguez.....	5,829.45	3,968.22	9,797.67	9	10,735.00
Moca.....	51.82		51.82		75.00
Morovis.....	57.81	234.48	292.29	1	680.00
Naguabo.....	322.57	415.42	737.99	1	680.00
Naranjito.....	114.84		114.84		75.00
Patillas.....	604.21	500.00	1,104.21	1	680.00
Peñuelas.....	215.58	219.59	435.17	1	800.00
Playa Mayagüez.....	8,210.11	5,455.32	13,665.43	2	2,230.00
Playa Naguabo.....	205.10		205.10		110.00
Playa de Ponce.....	3,547.77	3,384.46	6,932.23	2	2,695.00
Ponce.....	7,061.80	5,869.48	12,931.28	10	10,560.00
Punta de Santiago.....	231.66		231.66		110.00
Quebradillas.....	251.38	604.64	856.02	1	680.00
Rincón.....	68.08		68.08		

Office.	Receipts.			No. of clerks.	Total ex- pense of office.
	Postal.	Tele- graphic.	Total.		
Rio Grande	\$244. 00	\$219. 29	\$463. 89	1	\$680. 00
Rio Piedras	530. 03	345. 77	875. 80	2	2, 204. 00
Sábana Grande.....	264. 91	412. 80	677. 71	1	680. 00
Salinas.....	198. 01	262. 09	460. 10	1	680. 00
San German.....	1, 291. 92	761. 20	2, 053. 12	2	2, 098. 00
San Juan.....	31, 803. 86	45, 191. 24	76, 994. 60	31	24, 370. 00
San Lorenzo.....	153. 54	255. 21	408. 75	1	680. 00
San Sebastian.....	393. 35	689. 80	1, 082. 15	1	680. 00
Santa Isabel	249. 65	317. 94	577. 59	1	680. 00
Santurce.....	392. 55	189. 75	582. 30	1	1, 480. 00
Tallaboa	40. 46	.....	40. 46	.....	75. 00
Toa-Alta.....	254. 57	184. 80	439. 37	.....	500. 00
Toa-Paja.....	88. 74	.....	88. 74	.....	75. 00
Trujillo-Alto.....	49. 56	.....	49. 56	.....	75. 00
Utua.....	1, 183. 62	1, 490. 83	2, 674. 45	2	2, 230. 00
Vega-Alta	216. 52	.....	216. 52	.....	110. 00
Vega-Paja	274. 00	784. 78	1, 058. 78	1	680. 00
Villalba Arriba	68. 10	.....	68. 10	.....	75. 00
Yabucoa	816. 48	747. 15	1, 563. 63	1	680. 00
Yauco.....	1, 817. 09	1, 369. 55	3, 186. 64	2	2, 676. 00
Total.....	95, 000. 92	102, 082. 09	197, 083. 01	222	120, 234. 00

SUMMARY.

Total expenses of the postal and telegraphic service in Porto Rico.

General administration:		
Salaries.....		\$13, 330. 00
Rent.....		1, 380. 00
Postmasters and clerks' salaries.....		108, 340. 00
Rent of post-offices.....		7, 859. 00
Railroad messengers (6 at \$500).....		3, 000. 00
Mail messengers (depots to post-offices)		4, 035. 00
Star-route contractors		33, 670. 00
Maritime contractors (to Viéques and Culebra).....		1, 500. 00
Transatlantic mail service.....		67, 406. 00
Intercolonial mail service (Cuba, San Domingo, and Porto Rico).....		12, 000. 00
Material, etc		24, 000. 00
Mounted linemen (33 at \$300)		9, 900. 00
Universal Postal Union expenses.....		200. 00
Total expense		286, 620. 00
Total revenue—		
Postal	\$95, 000. 92	
Telegraphic.....	102, 082. 09	
		197, 083. 01
Deficit.....		89, 536. 99

We recommend the appointment of a chief postal supervisor, or with some such distinguishing title, with a suitable number of assistants, inspectors, and clerks, and suggest that the following organization will accomplish the desired results:

One chief postal supervisor, with a salary of \$2,500 per annum, and allowance of actual and necessary traveling expenses.

This officer, it is intended, will be the direct representative on the island of the Postmaster-General, possessing, so far as the postal service on the island is concerned, the same authority as is now vested by law in the assistant postmasters general of the present organization of the Post-Office Department.

One chief clerk to the chief postal supervisor, with a salary of \$1,800 per annum.

One bonded clerk, with a salary of \$1,200 per annum, who shall act as postal card and postage stamp agent.

One stenographer, with a salary of \$1,000 per annum.

One post-office inspector, with a salary of \$1,600 per annum and a per diem allowance of \$3 for actual and necessary traveling expenses,

for mail depredations, and inspection of post-offices, and contract mail service.

One messenger, with a salary of \$720 per annum.

It is needless to say that all of these officers and clerks should be conversant with the Spanish language.

It is suggested further that there be appointed for duty at the postal headquarters at San Juan a clerk of the office of the Auditor for the Post-Office Department, with a salary of \$1,600 per annum, for the preliminary examination of postal and money-order accounts, as well as the verification of mail contractors' accounts, as certified to by the Chief Postal Supervisor, thus furnishing an additional check against the possibility of error.

The committee recommends the establishment of post-offices at such points as they were located under the Spanish administration.

In some places the records show that post-offices were in existence under the Spanish régime which could be maintained only by reason of the fact that telegraph service was operated in connection with the postal service, the two services combined making it possible to employ persons at reasonable salaries to perform the duties.

The same rules which govern the establishment of post-offices in the United States should govern the establishment of proposed new offices in Porto Rico which may hereafter be applied for. It will be necessary, especially at the larger offices, viz: San Juan, Ponce, Mayagüez, Aguadilla, Arecibo, Guayama, and Humacao, to have Americans as postmasters, but, in the judgment of the committee, suitable natives should be appointed as clerks in such offices and postmasters in the smaller offices, and no one should be considered suitable unless he can read and write the English language and is possessed of sufficient intelligence to enable him to perform his duties without the constant assistance of an American.

We recommend that the same rules governing the appointment and pay of postmasters as are in vogue at the present time in the Department be applied to the appointment and pay of postmasters in Porto Rico, with this addition—that the bond executed by the postmasters should be in duplicate, one copy to be forwarded to the Department, upon which the commission will issue, the other to be filed with the chief postal supervisor of the island. All bonds, before being sent to Washington should be approved by him as to the character and financial responsibility of the bondsmen, and he should be empowered by law to take legal steps at once upon the bond in the event of any prospective loss to the Government by reason of defalcation of or sudden financial reverses to either or both of the bondsmen, so as to fully protect the Department. In case of the necessity for the execution of a new bond, by reason of the death of or sudden financial reverses to any of the sureties, he should be empowered to require new bonds to be executed in due form, and should forward a copy of them to the Department.

Another reason which makes this course essential is that it enables the chief postal supervisor to be advised as to the sufficiency of the bond to cover the amount of business done at each office. That officer should also be advised of all establishments, discontinuances, etc., of post-offices, and should be consulted relative to all matters of that character.

Porto Rico is an island situated 1,250 miles from the nearest port in the United States, and 1,400 miles from New York. It is now connected with this country by a line of War Department transports, with sailings arranged from New York direct to San Juan, sailing time about five days; but, returning, these steamers go via Cuba, making the

time from any port of the island to New York ten to twelve days. It is also connected by a merchant line (the Red "D" Line) of twice-a-month service, with alternate landings at San Juan and Ponce.

When affairs in the island shall have again returned to their normal condition, it is very improbable that there will be any greater frequency of steamship service than twice a month, thus rendering the means of communication between the United States and the island slow and liable to interruptions of considerable duration.

This consideration, together with the facts that the people of the island speak no other language than Spanish and are extremely poor, has led your committee to form the conclusion that the postal service of the island should, to a certain degree, be administered by a corps of clerks located at San Juan, the capital.

Under the Spanish system the mail contractors were paid monthly through the custom-house for their services, it being required that they should present bills for their services which had been approved by one of the alcaldes of the terminal offices of the route on which the service was performed.

All the revenues of the postal service were received by the custom-house, and all salaries and other expenses incident to the service were paid by that branch of the Government.

In the administration of the service in this country all direct expenses of the post-offices are paid from the revenues of each separate post-office, mail contractors only being paid by warrant on the treasury.

In Porto Rico it should be the aim to pay all the expenses of the service direct from the revenues of the post-offices, and, to enable this to be done, it will be necessary that certain changes be made in the system to meet the different conditions caused by the distance from this country, the infrequent communication, the difference of language, and the extreme poverty of the laboring classes.

The committee is of the opinion that a system should be devised under which payments to mail carriers for service performed should be made monthly, or as frequently as salaries are paid to officials and clerks, the necessities of the first-named class being more immediate than those of the latter class.

It is our opinion that the postmasters at San Juan and Ponce should be instructed to pay the bills for mail service performed upon the different routes on the certificates of the postmasters at the terminal offices that the service was properly performed, when such certificates have been examined and found correct and certified to by the chief postal supervisor, the accounts for such payments to be audited in the same manner as at present provided for all other such accounts before being paid by the branch of the Auditor's Office for the Post-Office Department at San Juan.

It is recommended that the surplus revenues of each office of the island be deposited with the postmasters at San Juan and Ponce, but, as the surplus revenues will not furnish sufficient funds for the payment of mail messengers and contractors, it will be necessary that a sum sufficient to cover the amount of the probable disbursements at San Juan and Ponce be deposited at the said offices by drafts of the Postmaster-General drawn upon the request of the Auditor for the Post-Office Department.

One of the clerks provided for in the above scheme of organization is given duties of a postal-card and postage stamp agent, and should provide postal supplies for the whole island.

In ordering supplies from this agent the postmaster should make the order in duplicate, one copy to be sent to the stamp division of the office of the Third Assistant Postmaster-General, and the other copy to the stamp agency at San Juan. Duplicate receipts for supplies received should also be given by the postmaster to the stamp division and stamp agency, thus furnishing a check on the latter independent of reports made by him.

This agency can also be utilized for the distribution of all postal supplies provided by the division of post-office supplies of the office of the First Assistant Postmaster-General.

We recommend that the registry system of the United States be introduced into the island under the present regulations in place of the system of certifying letters, which has hitherto been in vogue, and, as the bulk of registered matter will be exchanged between not more than six or seven offices of the island, we recommend the establishment of brass-lock exchanges between San Juan and Ponce, San Juan and Mayagüez, San Juan and Humacao, Ponce and Mayagüez, Ponce and Guayama, and between Guayama and Humacao.

We also recommend the establishment and extension of the money-order system in the island in place of the Spanish system of sending letters of declared value, and of insurance of contents of letters of declared value, at the offices doing a yearly business of more than \$200, as shown by the table on pages 7 and 8 of this report, and recommend that offices doing a yearly business of \$1,500 or more, as shown in the said table, be designated as international money-order offices.

We also recommend that the free-delivery system be introduced into the service of the island wherever allowable under the existing law, and that, in computing revenues, Ponce and Playa de Ponce be considered as one office, and that Mayagüez and Playa de Mayagüez be considered also as one office.

As has already been shown, a system of delivery was furnished under the Spanish régime, the service of which was paid for by the citizens. The Government paid the carriers a salary of \$180 per annum for their services in delivering telegrams and for general work about the office. This system prevailed at a great many of the offices of the island, and has been permitted to continue wherever the question has been brought to the attention of the committee, the carriers having been required to file in the military postal station a request signed by the citizens to the effect that the carriers be permitted to continue to deliver mail matter to them. We perceive no reason why these carriers should not be permitted to continue to deliver mail matter at offices where the free-delivery service shall not be introduced.

We think that the special-delivery system can be introduced into the service with satisfactory results, and recommend that it be done.

The private letter carriers can be utilized in making these deliveries, or suitable special-delivery messenger boys can be employed at any office at very low wages as compared with the scale prevailing in the United States.

Mail-messenger service will have to be provided at the offices named on pages 11 and 12 of this report, points at which it has hitherto been maintained, and we suggest that at San Juan, Ponce, and Mayagüez the duties of the mail messenger be extended so as to embrace the delivery to and from the steamship landings of mail as often as required, but which would ordinarily be not oftener than once a week.

In this connection we have to state that two proposals for service

between Ponce and Playa Ponce, thirteen times a week, and five proposals for service between Ponce and Yauco, are submitted.

Proposals for star service have also been received by the committee and are filed herewith.

In the table given on pages 7 and 8 of this report is indicated the rental paid for offices at such places where it was authorized.

We recommend that the question of continuing these rentals by making new leases be taken up by the Department.

At San Juan a public building was occupied by order of General Brooke, for which it is understood that no rental is to be paid.

At Ponce a portion of a building on the Calle de la Marina has been occupied by the post-office since September 17, 1898.

The municipality of Ponce has agreed to pay the rent, \$50 per month, to December 31, 1898, the lessee of the building having further agreed, in his agreement with the alcalde, that the Post Office Department should have the option of continuing to occupy the premises as a post-office at the same rate from January 1, 1899, upon condition that five incandescent electric lights which were in the office be bought and paid for at the rate of \$5 each.

At Mayagüez three rooms were occupied in the municipality building, after an agreement between Captain Buchanan, the collector of the port, and the alcalde of the city, without any understanding as to what rental would be charged. It is our opinion that a rental of \$25 per month should be paid to the city for the rental of these quarters.

At Aguadilla new quarters were occupied on the lower floor of a building situated directly on the plaza, very convenient to the citizens, and much superior to the building formerly occupied. The rental agreed upon was \$17 per month from December 1, 1898, of which amount \$12 per month was considered to be the proper proportion to be paid by the Post Office Department, and \$5 by the War Department, a portion of the space being occupied by the United States Signal Service Corps.

At Guayama the post-office occupies a building assigned for the purpose by the military commander of the district. It is situated directly on the plaza, and is more convenient to the citizens than was the site formerly occupied by the Spanish post office, which was some distance down a side street, for which a rental of \$168 per annum was allowed by the general administration.

The building now occupied was formerly occupied by the Spanish military commander, so it is understood.

At Humacao the building formerly occupied by the Spanish post-office and telegraph service was first taken possession of by the United States Signal Service, and that portion of it devoted to the uses of the post office is now used by the military postal station established there, under an agreement with a sergeant of the United States Signal Service, who is in charge of the telegraph service, by which it is agreed that the sum of \$10 per month, United States currency, shall be paid by the Post Office Department to the signal sergeant for the use of four rooms in the building.

The agreement referred to is herewith submitted.

The sum assigned for rental at Humacao under the Spanish régime was \$420 per annum.

In the cities of Yauco, Cayey, and Camuy, where military stations have been open, no changes have been made in the amount of rental to be paid, but as the rental has been reduced in other places where an

effort has been made, it is believed that a saving can be effected at these three places.

At Playa Ponce the office is in the custom-house, and no rental is being charged.

The furniture and fixtures in the Spanish post-offices were of the plainest and poorest character, totally unfit, as we view it, for the purposes for which they were intended.

Special efforts have been made to interest the military authorities to provide new outfits at such stations as were opened up in the cities where garrisons of troops were maintained; and this could ordinarily be done by carpenters attached to the quartermaster's department, but at Mayagüez a bill of \$34.50 was incurred for carpenter work, which was ordered by the committee to be paid by the postal agent. At Ponce the carpenter work had not been completed at the time of the departure of the committee. It was understood by members of the committee that this work was being done at the order and expense of the military authorities of that district.

The mail bags formerly in use were made of jute and were closed by cords tied around the necks of the bags, the knots of which were sealed with sealing wax. Their quality was poor and those coming under our observation were very much worn.

On the horseback routes two boxes covered with zinc were used, one on either side of the horse, the carrier riding seated on a pad placed on the horse's back between the boxes. These boxes were locked, but the carrier had the key in his possession.

Sufficient mail equipment has been received from this country to provide for exchanges of newspaper mails between the military stations, but the letter mails must still be exchanged in sealed bags, owing to the fact that a supply of keys has not been received with which to supply each office.

We recommend that the mail equipment used in this country, bags, sacks, locks, and keys, except that the locks be made of brass, or a non-corroding metal throughout instead of steel, be provided for use in Porto Rico, and that for the horseback routes the new form of horse mail bags made of heavy duck with leather trimmings be used. In fact it would be preferable that no all-leather pouches be furnished, as the cotton bags will give better satisfaction in that country where the rainfalls are very heavy and continuous.

In regard to the ocean mail service very little information of value could be secured, because of the interruption caused by the existing war.

The Spanish Trans-Atlantic Company made bimonthly trips from Cadiz, by San Juan, to Havana and return, and another company, that of Ramon Herrera, performed bimonthly service between Havana and other Cuban ports, and Ponce, Mayagüez, and Agnadilla, but the service by these two lines has not been performed since the commencement of hostilities in the present war.

The general administration appropriated the sum of \$12,000 for the intercolonial service.

The French Trans-Atlantic Company has a line of steamers sailing monthly from Havre, via St. Thomas and San Juan, to San Domingo and Jacmel and connecting with an annex steamer making monthly trips from Fort Pierre, via St. Thomas, Ponce, and Mayagüez, to San Domingo and Jacmel.

The Hamburg-American Company had a line of steamers which made

bimonthly trips between Hamburg and Havana, touching at Mayaguez and Ponce on the first trip and at Aguadilla, Mayagüez, Ponce, and Santiago de Cuba on the second trip.

For service by mail steamers the general administration appropriated \$67,406 per annum.

As has already been indicated in this report the postal and telegraphic services were under the supervision of the same officials, and the work of both services was performed by the same employees.

Your committee has considered the advisability of recommending that the telegraphic service be continued to be performed in connection with the postal service, but has decided to make no recommendation relative thereto.

There is no authority under the existing law for the conduct of telegraph service by the Post-Office Department in connection with the postal service, and to combine the telegraphic with the postal service would render necessary in every case the appointment of skilled telegraphers as post-office clerks, which fact alone would tend to greatly increase the salary expense account without increasing the efficiency of the postal service in any degree; and it is not believed, further, that the revenues would be increased sufficiently to warrant the additional expense of the operation of the service.

The telegraph service is now operated for military purposes by the United States Signal Service, and it can continue to be so operated by that branch of the Army at a much less expense than would be incurred by the Post-Office Department in operating it. There being no private lines, the telegraphic business of the Army, most of which is urgent and does not admit of the risk that is necessarily incurred when the mails are used, of making connection at relay and connecting points, must be done on lines which can be controlled by it. The transportation facilities which are provided for an army, or in connection with it, furnishes the means of hauling supplies, materials, workmen, etc., which would be an enormous expense to any other department.

Your committee recommends that the domestic rates of postage, 2 cents per ounce for first-class matter, etc., be established between the United States and Porto Rico, and the continuance of that rate of postage between all points in the Island, thus applying to Porto Rico the domestic rates of postage of this country.

In this connection it is well to state that at the present time the rate of exchange in the custom-houses and military postal stations is two Porto Rican pesos for one dollar, American, by order of the military authorities, so that from the point of view of the Porto Rican citizen he is required to pay 4 cents postage on first-class matter where, before the war, he paid but 3 cents.

During the war and before the American occupation, in addition to the regular postage, he paid 2 cents postage as a war tax.

The rates of exchange given by the merchants varies throughout the island from \$1.75 to \$1.40. The rates have been steadily declining, owing, it is said, to the demand for Porto Rican money with which to gather and move the crops, and to the fact that the Spanish Government has declared the Porto Rican peso to be at par with the Spanish peso.

The question of the relative value of the American and Porto Rican money is one which deserves immediate settlement.

In its present aspect it affects most injuriously the interests of the American soldiers and civilians in the island, who are compelled to

accept whatever rates the Porto Rican banks and merchants think fit to offer for the American money which they have.

The custom-houses and military postal stations exchange money at the rate of two for one for soldiers and post-office employees, but not enough Porto Rican money is received to satisfy the demand for it.

In this connection it is proper to speak of the per diem allowance to postal employees on the island, which was fixed by you at \$1.25, United States currency, upon the report of this committee. At the time that this rate was decided upon the rate of exchange at San Juan and Ponce was \$1.75; at Guayama and Humacao, \$2, and at Mayagüez, \$1.60, while the military postal stations and custom-houses were able to supply Porto Rican money at \$2, but the receipts of Porto Rican money have decreased at the custom-houses and military postal stations, and the rates of exchange have declined throughout the island, being \$1.50 for bank notes and \$1.40 for silver in Ponce at the time of our departure.

This fact has caused some complaint from post-office employees, but the committee is of the opinion that the amount allowed is ample under the present conditions for the payment of the actual living expenses of the employees; that is, the cost of suitable shelter and proper food, and recommends that no greater allowance be made until the rate of exchange shall have greatly decreased or disappeared entirely.

It has been found necessary to employ interpreters at various offices.

Prior to the arrival of the committee in Porto Rico, W. F. Lee had been employed as interpreter in Military Station No. 1, Ponce, at a salary of \$40 per month, United States currency, and is now performing efficient service in the office, combining the duties of general-delivery clerk with those of interpreter.

He is in every way competent, and the committee recommends that his compensation be increased to \$60 per month, United States currency.

Louis Antonsante was employed as an interpreter, to take effect from September 22, 1898, at a salary of \$30 per month, United States currency, for duty in the office at Arecibo, with the understanding that he would also perform the duties of a post-office clerk. From the date of his employment up to the date of the opening of the office at Arecibo he performed service in the office at Aguadilla. He has given good satisfaction in the performance of his duties.

J. G. Lopez was employed as an interpreter for service in the office at Aguadilla, with a salary of \$25 per month, United States currency, taking effect from October 5, 1898.

Tomás C. Verá was employed as an interpreter for service in the post-office at Mayagüez, at a salary of \$60 per month, United States currency, from September 11, 1898.

He is a well-educated man and has been employed in the Mayagüez office for many years. He furnishes good and efficient service. The rate of his compensation was stated so that in United States currency it would be equal to what he received for his services under the Spanish administration.

The committee arrived at Ponce September 7, 1898, and found the office in operation in the custom house at Playa Ponce, with H. M. Robinson in charge, the post-office force having arrived the latter part of July with General Brooke's expedition, and the office having been opened August 1, 1898.

The office was in good working order, and the postal service was being as efficiently performed as was possible under the circumstances, the

fixtures having been improvised in almost every instance, while the post-office equipment was inadequate and lacking in many respects.

The clerical force found in the office at the time of arrival was most efficient, and deserves a great deal of credit for the work it did and the obstacles in the way of a successful performance of the service which it sought to overcome.

One fact which rendered the service doubly difficult was the constant changing of the stations of troops, the arrival of fresh troops, and the return of soldiers on the island to this country.

Mr. H. M. Robinson, appointed clerk in charge at military station No. 1, Ponce, Porto Rico, and designated afterwards by you as superintendent of the military stations in Porto Rico, has proved himself a man of resources and great executive ability, and has been indefatigable in the performance of his duties.

Notwithstanding the fact that the clerical force was almost daily changed, owing to the necessity for detailing experienced clerks to offices opened in newly acquired territory, to the sickness and return to this country of a great many clerks, and to the arrival of a great many clerks by every transport, rendering it necessary to constantly instruct clerks in their duties, Mr. Robinson performed his duties in a manner highly satisfactory to the military authorities and to the citizens who received their mail from that office, and is entitled to a great deal of credit for his work.

The other clerks now stationed on the island are entitled to commendation for the enthusiasm and manner in which they are performing their work, with the exception of those concerning whom special reports have been made to you.

At the time of the arrival of the committee in Porto Rico there was but one American office in operation on the island, Ponce, while at the time of its departure seventeen offices were in full operation, viz: Ponce, Mayagüez, Utuado, Coamo, Juana Diaz, Playa Ponce, Guayama, Aguadilla, Humacao, Viéques, Fajardo, Arecibo, Cayey, Caguas, Aibonito, and San Juan, opened in the order named.

Instructions were issued through Superintendent Robinson September 18, 1898, to the postal agent at Mayagüez to employ José Benagas y Gotal as the mail messenger between Mayagüez and Aguadilla at the rate of \$800 per annum, United States currency, to carry the mails on the railroad between Mayagüez and Aguadilla, and with the understanding that he would provide for the transportation of the mail between the railroad station and the post-office at each terminus, and that he would perform whatever service should be required of him in the Aguadilla post-office between 8.30 a. m. and 3.30 p. m.

Arrangements were made October 12, 1898, by Messrs. Fenton and Mooney, of the committee, in response to telegraphic instructions from the chairman of the committee, with John Dimas and John de Choudens to perform service as mail messengers on the railroad between San Juan and Camuy, alternately accompanying the mails on the railroad, and, when not so engaged, performing such duties as were required of them in the San Juan post-office. The compensation of each is at the rate of \$50 per month, United States currency. One salary should be charged to the appropriation for clerk hire, while the other should be charged to the mail-messenger appropriation.

From October 18, 1898, Ventura Marin was employed as a mail messenger between the station and the post-office at San Juan, at a compensation of \$25 per month, United States currency.

For the permanent administration of the postal service of the island, we recommend to the consideration of the Department the question of the advisability of dividing the territory into seven sections or districts, the boundaries of which should correspond to the seven political divisions, as they existed under the Spanish régime, with one central post-office, the other offices within that district to be stations or sub-stations of the central office.

The salaries of the clerks in charge of the several stations should be fixed at a sum not exceeding what the commissions on cancellations would be if computed in the manner as is done in the case of the fourth-class offices of the United States, said salaries to be fixed in even hundreds of dollars, except in cases where commissions will be less than \$100, when the salary should be \$50.

The salaries should be based on the receipts for one year, and should be readjusted each year, commencing with July 1, the readjusted salary to be based on the receipts for four quarters ended March 31 of each year.

The seven principal offices of the island, viz, San Juan, Arecibo, Aguadilla, Mayagüez, Ponce, Guayama, and Humacao, should be made Presidential from the time the permanent organization shall take effect.

In the first district there would be one central office (San Juan) and eighteen stations, viz: Bayamón, Canóvanas, Carolina, Cataño, Corozal, Dorado, Guaynabo, Loiza, Maureyes, Naranjito, Rio Grande, Rio Piedras, Santurce, Toa-Alta, Toa-Baja, Trujillo-Alto, Vega-Alta, Vega-Baja.

In the second district, one central office (Arecibo) and eleven stations, viz: Barceloneta, Camuy, Ciales, Cialitos, Florida, Hatillo, Jayuya, Manatí, Moróvis, Quebradillas, Utuado.

In the third district, one central office (Aguadilla) and six stations, viz: Aguada, Isabela, Lares, Moca, Rincon, San Sebastian.

In the fourth district, one central office (Mayagüez) and nine stations, viz: Aldea Sanz, Añasco, Cabo Rojo, Hormigueros, Lajas, Las Marias, Maricao, Sábana Grande, San German.

In the fifth district, one central office (Ponce) and sixteen stations, viz: Adjuntas, Aibonito, Barranquitas, Barros, Coamo, Coto del Laurel, Gúanica, Guaraguao, Guayanilla, Juana Diaz, Peñuelas, Playa de Ponce, Santa Isabel, Tallaboa, Villalba Arriba, Yauco.

In the sixth district, one central office (Guayama) and ten stations, viz: Aguas-Buenas, Arroyo, Cágua, Cayey, Uidra, Comerío, Gurabo, Juncos, Salinas, San Lorenzo.

And in the seventh district, one central office (Humacao) and thirteen stations, viz: Ceiba, Culebra, Oulebrita, Fajardo, Isla de Viéques, Las Piedras, Luquillo, Maunabo, Naguabo, Patillas, Playa Naguabo, Punta de Santiago, Yabucoa.

Your committee went on the mission appointed by you with the sole objects of inaugurating an efficient postal service for Porto Rico and of advancing the interests of the Government at every point coming under its jurisdiction. While the committee was imbued with a desire to make the service on the island self-supporting so far as possible, it is hoped that this condition will be attained in the near future.

The members of the committee have at all times worked in harmony with each other, and they are agreed on all recommendations contained herein.

In concluding this report the members of the committee, as well as the secretary, desire to acknowledge to you their appreciation of your

appointment of them in connection therewith, and sincerely hope that they have, in your opinion, successfully performed the work designated by you in your instructions to them.

We have the honor to be, very respectfully,

JAMES E. STUART, *Chairman.*

CHAS. F. TROTTER,

JOHN M. MASTEN,

W. M. MOONEY,

D. H. FENTON,

MARTIN A. MACDONALD, *Secretary.*

Hon. CHARLES EMORY SMITH,

Postmaster-General.

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R E P O R T

OF THE

SECRETARY OF AGRICULTURE.

TO THE PRESIDENT:

I have the honor to submit a report of the work of the Department of Agriculture for the year ending June 30, 1898. This report contains a review of the operations of the several Bureaus, Divisions, and Offices through which the work is carried on. For your own convenience and that of those who shall have occasion to peruse this report, I have preceded this general review with a summary, in which some salient feature of the work undertaken by each of these several Bureaus, Divisions, and Offices is very briefly indicated. Several considerations are also presented of a more general character relating to the work of the Department and the services which I conceive it should seek to render to the country, upon which some earnest recommendations are based, and which have also been made the basis for some of the estimates submitted by me for the appropriations for the Department for the ensuing fiscal year, and to which the favorable consideration of Congress is earnestly invited.

SUMMARY.

WEATHER BUREAU.

Observation and forecast stations have been extended around the Caribbean Sea, to warn our fleets and merchant vessels of danger from cyclones, and increased through the interior of the country, especially in the mountain States, to enable the observer to inform fruit growers of precipitation and sudden changes of temperature.

DIVISION OF VEGETABLE PHYSIOLOGY AND PATHOLOGY.

Good work has been done by the Division of Vegetable Physiology and Pathology in hybridizing the orange and other citrus plants, and in the crossing of pineapples, whereby the size and vigor of the fruit are much increased and the flavor greatly improved.

SECTION OF FOREIGN MARKETS.

Our knowledge of the islands of the Caribbean and China seas is increased by timely publications of the Section of Foreign Markets.

Our foreign trade in agricultural products is very extensive, being over two-thirds of our domestic exports. It is steadily growing, while the production at home of field products that have been introduced from foreign countries is rapidly increasing, causing a corresponding decrease in agricultural imports.

BIOLOGICAL SURVEY.

While the Department is searching the world for seeds and plants to diversify our crops and add new varieties to meet sectional requirements, the Biological Survey is determining the areas best adapted to various crops and mapping the natural life zones of the United States. It is a court of last resort, where birds and animals get a final hearing regarding their relations to the farm and orchard. Their stomach contents witness for or against them.

FARMERS' BULLETINS.

The Department is unable to give Members of Congress as many Farmers' Bulletins as their constituents desire. As fast as scientists find facts bearing on production, I think it wise to send them to the farmers. The farmers want them, Congressmen desire to send them, and appropriations to this end should be enlarged.

SCIENTIFIC EXPLORATION.

The Department has four scientific explorers abroad, getting seeds and plants—one in Russia, one in the countries around the Mediterranean, one in the China seas, and one in South America.

FORESTRY.

The treeless region is now getting vigorous attention from our Forester, Mr. Pinchot. Species adapted to dry regions are being introduced. The destruction of forests in the Northwest leaves deserts in many cases. The life history and rate of development of white pine have been investigated and facts concerning them are in press. Mr. Pinchot, is planning to introduce better methods of handling forest lands in public and private ownership, the private owners paying the expenses of Department agents who give instruction. A million acres in twenty States are offered for experimentation and 100,000 acres are now under management. Economic changes in lumbering will be the result. Forest fires cause floods and droughts and consequently interfere with production, especially in irrigated regions. A study of fire prevention and fire fighting is being made. Wood supply is becoming a matter of such interest that the Department deems it wise to give it special attention.

SOILS AND TOBACCO.

Many States are interested in the heredity, flavoring, and fermentation of tobacco, and the Department has these features under

research. Farmers in the mountain States, who are making their lands sterile by using too much water, require information regarding its use in irrigation. The Division of Soils is getting facts for them.

POST-GRADUATE WORK IN THE DEPARTMENT

After graduation at agricultural colleges, the Divisions of the Department of Agriculture might be opened for post-graduate study in special lines, so that the best facilities in the land may be offered for preparing teachers for the agricultural colleges and economic scientists for Department work.

THE GRASSES.

The best pastures produce animals at least cost. The Division of Agrostology studies grasses and the grass requirements of localities. Five hundred varieties grow in the Department gardens, and grasses suitable for pastures, lawns, woods, and sand are studied. Foreign grasses are tried in congenial zones. Legumes are brought from abroad to meet peculiar conditions here. We have grass gardens in arid and semiarid regions, where varieties from similar conditions in the Old World are studied. The Department is endeavoring to find grasses and legumes for worn-out lands in the East and South, and binding grasses, to arrest sand drift, are getting attention.

DIVISION OF BOTANY.

The Division of Botany is at work to reduce our importations of the little things that have been costing us \$8,000,000 annually. Western States are now growing chicory. In 1896 we imported 16,317,888 pounds; in 1898 we imported only 315,707 pounds of raw chicory. The farmers of Michigan, Nebraska, and other States will now furnish our supply. Ginseng is also a promising plant for cultivation. This Division will make tests to protect farmers and merchants against foul and fraudulently imported seeds, and test the importations of the Department before distribution.

ECONOMIC CHEMISTRY.

We are not giving economic chemistry the attention it deserves. We pay foreign countries very large sums for coal-tar products, for example, while we have skilled chemists, capital, and raw material in abundance at home. Our raw material is wasted along these lines, while we are content to buy abroad; we employ, indirectly, foreign chemists to work up for us foreign raw material. Attention to this by the law-making power will find the remedy.

CROP STATISTICS.

The reason for having a Division of Statistics is that it will collect and publish information regarding the condition, acreage, and tendency of production of the principal crops, and the number of farm

animals at home and abroad, so that the isolated producer may get notice of quantities and probable demand as soon as those who deal in these commodities. When this is well done, its value to the producer is inestimable. Strenuous efforts are being made to get the truth concerning production, and great care is taken to publish results for general information only.

AGRICULTURE IN ALASKA.

A practical scientist was sent to Alaska to select sites for experimental work—to test grains and grasses, legumes and vegetables, and study the possibilities of future production. He grew all of these crops with great success. Alaska will grow, along the coast, oats, barley, flax, rye, grasses, legumes, and vegetables of as good quality as many of our Northern States produce. All the conditions for making fine dairy products are favorable. We shall have the interior explored next summer, in order that its capacity to support population may be learned.

ROAD INQUIRY.

Good roads save time and expense. Steel rails are perhaps the coming material where hard rock is not convenient.

EXPERIMENT STATIONS.

The experiment stations are more effective than ever before. The annual appropriation by Congress of \$720,000 is supplemented by \$400,000 from the States, and the stations are doing more original work. The Department presents their results in Farmers' Bulletins. The feeding of mankind is being studied in connection with State institutions, and information is distributed to form the basis of courses of instruction. All of our country west of the Missouri River is interested in irrigation, and facts are being collated regarding soil moisture, the supply and distribution of water, uniformity of laws and court decisions relating to irrigation, and the requirements of different crops in this regard.

NATURE STUDY IN THE COMMON SCHOOLS.

Congress endowed agricultural colleges that are revolutionizing methods of production. Nature studies, however, should be introduced into the common schools, so that the young farmer's mind may be turned early to life-work studies. The teacher should get instruction in the normal school or agricultural college.

ANIMAL INDUSTRY.

REMEDY FOR FEVER TICKS OF CATTLE.

The Bureau of Animal Industry has continued its experiments in dipping cattle to destroy the fever ticks, and a substance has been found in which cattle may be dipped and which will destroy all the

ticks on an animal in a single dipping. This method has been in practical use for a short time only, and experiments are now in progress to perfect it, so that dipped cattle from the infected districts may be shipped north of the quarantine line during the entire year; heretofore they have been restricted by quarantine during ten months of the year. The value of this measure is beyond computation, both to the stockmen south of the quarantine line and to the cattle feeders and grain producers north of it. Demand is increasing at home and abroad for fine beef, and this discovery is destined to remove one of the impediments to its production.

REMEDY FOR HOG CHOLERA.

The Bureau has continued experimentation with antitoxin serum for the prevention and cure of hog cholera. Congress, at its last session, made an appropriation for this work, which became available at the beginning of the present fiscal year. Buildings were erected at our experiment station, and animals purchased to make the serum in sufficient quantities to conduct extensive research. The results of the previous year have been corroborated. Eighty per cent of the animals treated were saved, while a like per cent of the check herds not treated died. This justifies the Department in efforts to supply in future to herdsmen throughout the country such serum as can be made. It is for Congress to determine whether serum shall be given free or a charge be made covering the expense of manufacture, which would be about 15 cents for each animal.

EMERGENCY APPROPRIATION.

The nature of the work in the Department is such that future requirements can not all be anticipated specifically in an appropriation bill. Urgent needs of producers call for expenditures in special directions through some of our scientific Divisions; the sudden appearance of a bacteriological or insect pest; investigation of animal or crop conditions in some section of the country; inquiry into conditions in foreign countries where we sell or with whom we compete; assistance to a struggling scientist to complete work of general agricultural interest; exploration by scientists of islands coming into the possession of the United States, and such like, suggest the wisdom of appropriating a lump sum to be used by the Secretary of Agriculture, subject to the laws regarding vouchers and auditing.

INSPECTION OF FOREIGN GOODS.

There is an evident necessity for the inspection of many articles imported from foreign countries that contain substances injurious to the public health. The Department chemists are doing work along this line which suggests a more comprehensive inquiry. At present the Department buys samples for analysis in the open market. It

may be necessary, where there is ground for suspicion and a necessity for the identification of source, to open packages at ports of entry, as it is proposed in foreign countries to do with our exports in certain cases.

BUTTER SHIPMENTS.

The experimental exports of butter by this Department to Great Britain, which were commenced in the spring of 1897 and partially reported upon a year ago, were continued until the close of the active creamery year of 1897 and resumed at the opening of the season of 1898 upon an enlarged scale.

Without anticipating the results of the present (or second) season of these trial exports, it can now be confidently stated that much additional information has been obtained in the line desired, and a decided gain is evident in the favorable impression made by butter of the first quality from creameries in the United States upon the best class of the butter trade in London and Manchester.

THE DEPARTMENT LIBRARY.

The books of the late Prof. F. von Baur, of Munich, have been added to the collection on forestry in the Department Library, making that collection very complete. The total number added during the year was nearly 5,000, bringing the whole number of volumes in the Library close to 65,000. This forms one of the largest collections of books on agricultural topics in the world.

The Library is constantly used in the investigations conducted by the scientific Divisions, and is kept up to date in its various branches by the purchase and addition of the latest standard publications relating to matters in which the Department is interested. It is also used to a considerable extent by persons not connected with the Department, especially by teachers in the public schools and by students in the science classes of the various educational institutions of the city.

EXPERIMENTAL GARDENS.

The distribution of young plants to various parts of the country was continued during the year, reaching a total of nearly 190,000, including bulbs. Among these were olive, fig, and camphor plants and cuttings. Attention is called to the fact that the growing of rubber plants even in the most favorable localities of Florida can hardly be commercially successful.

The propagation of plants for general distribution has been continued, resulting in the accumulation of many thousands of plants of various kinds.

PARIS EXPOSITION IN 1900.

Congress has imposed upon the Secretary of Agriculture the duty of preparing for the Paris Exposition in 1900 an exhibit covering the

agricultural resources of the United States (Groups VII, VIII, and X—Agriculture, Horticulture, and Food Products). I am fully alive to the importance to American agriculture of this opportunity to enlarge the knowledge and appreciation of the people of the Old World of the extent and variety of the products which the bounty of nature enables the American farmer to draw from Earth's prolific bosom. The first steps have been taken after consultation and in cooperation with the Commissioner-General, and every effort will be made to see that American agriculture is properly represented at this great celebration. Should the appropriations already provided prove inadequate, I feel confident Congress will not hesitate to enlarge them rather than to have this important exhibit lacking in any single respect.

PRACTICABILITY OF EXPORTING DAIRY PRODUCTS.

Owing to better home demand for dairy products, it is not commercially profitable to send butter to Europe at the present time. The home demand for our best butters absorbs the supply. This is not always the case, however, and the Department regards it wise to obtain for dairymen all the facts relating to the export of this article to the several commercial centers of both continental and insular Europe. For this purpose the Department sent an agent to Paris to ascertain what encouragement there would be to ship butter to that point. It was found that no line of steamers sailing direct from the United States to French ports could furnish refrigeration space, and so shipments could not be made during the heated period. An agent was also sent to Hamburg, to ascertain for our people what the facts are regarding customs duties, as well as prohibitions and other difficulties that might meet exporters of butter to that country.

Our finest butter can be profitably made and sent to both France and Germany whenever the home supply is greater than the home demand for first-class goods. The American farmer is selling cheap grains and mill feeds to European dairymen, who meet us in European markets with products made from raw material furnished by us. There is every reason to believe that the tendency is growing within our own country toward the consumption of grains and mill feeds at home, exporting the higher-priced products of skill. As our producers manufacture more and more on the farm and the great volume of raw materials is turned into the higher-selling articles, we can furnish fine dairy products to European countries at a lower rate than they can be produced under European conditions on dearer lands and with dearer feeds.

The trade in American farm products is growing in the China seas. Scientific inquiry into the principles that underlie the making of fine dairy products is preparing our people to furnish butter in condition to be exported in air-tight packages, so that they will remain sweet for long periods in tropical countries. In order that markets may be

opened up in Japan, China, and other countries of the Pacific Ocean, an agent is now in that region establishing agencies to which the Department will make trial shipments with a view to ascertaining all the facts for the benefit of the dairymen.

INSPECTION OF DAIRY PRODUCTS.

The existing system of Government inspection and certification of meats and meat products for export may be extended (with suitable modifications) to include butter, cheese, and condensed milk for export from the United States.

The combined efforts of the Government and of commercial enterprise may succeed in the early establishment of a high reputation for American butter in desirable foreign markets. But as soon as accomplished, this becomes liable to be destroyed by the cupidity of those who, trading on this reputation, flood the same market with butter of low grade, yet still entitled to export and sale as "produce of the United States." This will disgust merchants and consumers alike and reverse the reputation of our butter, just as the fine market in Great Britain for our cheese was recently ruined by the quantity of low-grade and counterfeit cheese which was exported without being marked to show its true character.

The remedy seems to lie in extending and adapting the provisions of law regarding the inspection of meats exported from this country so as to make them apply to butter and cheese. The brands of "pure butter" and "full-cream cheese" should then be affixed by United States inspectors to such products only as are of a fixed minimum standard of quality. Such precautions, duly legalized and properly executed, would place the good butter and cheese of this country in foreign markets under the identifying label and guaranty of the United States Government, leaving similar merchandise of lower grade to find a place for itself, upon its own merits. It should be borne in mind that dairy products of Denmark and Canada, which are the chief competitors of the United States in the markets of Great Britain, bear the inspection certificate and guaranty of quality from their respective Governments, and thereby maintain a great commercial advantage.

Such a system of inspection is much desired by the most reliable exporters, and the proposition has met with decided approval wherever considered by fair-minded, interested parties.

NATURE-TEACHING IN THE COMMON SCHOOLS.

There is growing interest in education that relates to production. All classes of intelligent people favor it. Congress endowed colleges to teach it, and progress is being made, but not so rapidly as the growth of our country demands. More knowledge concerning what

the farmer deals with every day would enable him to control conditions, produce more from an acre, and contribute more to the general welfare. The education of our people in common school, high school, and college has not been designed to prepare them for producing from the soil, excepting the very few who have found their way into our agricultural colleges. It is evident to educators in agricultural science that elementary study should be introduced into the common schools to give direction early in life.

Agriculture, horticulture, forestry, gardening, and landscaping are delightful studies that attract people in all walks of life, but there is enough to be learned regarding each of these to require the devotion of a lifetime. The colleges and experiment stations endowed by the Federal Government provide for training along this line for longer or shorter periods at the institutions of the several States and Territories designed for this purpose; but while encouraging progress has been made in building up courses in these institutions that teach the sciences relating to production, instruction before going to college and after graduation is lacking. Nothing is being done in most of the common schools of the States to cultivate a taste for and lead the mind to inquire into and store up facts regarding nature, so that the young farmer may be directed into the path that leads to education concerning his future life work.

The great prerequisite is the education of the teacher. Most of the States have institutes where teachers are required to assemble for instruction in their work; there they should be met by lecturers from the agricultural colleges who may be qualified to outline methods of nature studies in the common schools. The normal schools of the States could give courses of instruction along these lines to those who are fitting themselves for teaching in the high schools, so that instruction of a more advanced character might be given their graduates, preparing them for and inclining them toward, the agricultural college.

PRACTICAL EXPERIMENTS IN NATURE TEACHING UNDER STATE AUTHORITY.

In New York, the College of Agriculture of Cornell University has a special State appropriation of \$25,000 per annum to be used in aiding the introduction of nature teaching into the common schools and the carrying on of simple agricultural experiments in different parts of the State. The plan followed has been to employ experts in the different sciences to prepare brief leaflets containing lessons on different subjects for the use of teachers in the common schools. These leaflets are distributed to teachers throughout the State, and there has been such a large demand for them from teachers in other States that arrangements have been made to sell them at a nominal price.

The professors and other agents of the university attend meetings of teachers from time to time, to explain the scope of this work and to

show the teachers how to carry out simple instruction on nature topics. Many of these leaflets relate directly to agricultural subjects. For example, in one leaflet the teacher is instructed to have the children plant squash seeds, take some of them up at intervals to learn how the seeds germinate, and watch what happens to the little plants as they grow. At another time the children are encouraged to plant little gardens and carefully watch some of the things that grow in them; or they study some insect which preys upon fruit, or make collections of the insects about their homes, or watch them to see whether they are doing things good or bad for the farmer. This movement has rapidly increased in popularity, and the leaflets are used in many city schools as well as in those in the country. Hundreds of simple experiments with fertilizers on potatoes have been carried on in different parts of the State with some of the money above referred to. For carrying on all this work the university has employed its teaching force and a small corps of special agents and clerks.

In Indiana, Purdue University has undertaken a similar work, though its funds have not permitted it to make this very extensive. A number of leaflets have been prepared by different members of the faculty and have been sent out to teachers throughout the State. In a number of other States nature teaching has been introduced into the common schools, but for the most part in the schools in the larger towns and cities, where there were teachers who had had some training in natural science. As a result of the widespread interest on this subject, teachers' manuals and text-books for instruction in this branch are being prepared.

Without doubt the greatest difficulties in this matter are to overcome the conservatism of local boards managing the country schools and to get competent teachers.

FACILITIES OF THE DEPARTMENT FOR POST-GRADUATE INSTRUCTION IN AGRICULTURAL SCIENCE.

George Washington, by his will, left property to be devoted to university education in the District of Columbia. There is no university in the land where the young farmer may pursue post-graduate studies in all the sciences relating to production. The scientific Divisions of the Department of Agriculture can, to some extent, provide post-graduate facilities. Our chiefs of Divisions are very proficient in their lines; our apparatus the best obtainable; our libraries the most complete of any in the nation. We can direct the studies of a few bright young people in each Division, and when the Department requires help, as it often does, these young scientists will be obtainable.

They should be graduates of agricultural colleges and come to the Department of Agriculture through a system of examination that would bring the best and be fair to all applicants. The capacity of the Department is limited, but something can be done that will indicate to Congress the value of the plan. The Department often needs

assistants to take the place of those who are tempted to accept higher salaries in State institutions. The opening of our laboratories to post-graduate work would provide an eligible list from which to fill vacancies as they occur, supply temporary agents, and be a source from which State institutions might get assistants in scientific lines.

INVESTIGATION OF AGRICULTURAL RESOURCES OF INSULAR DEPENDENCIES OF THE UNITED STATES.

In the territories recently brought under the control of the United States Government the agricultural interests urgently call for attention by this Department. While in all countries the agricultural industry is admittedly of the first importance, this is especially true of Hawaii and the West India Islands, which depend almost exclusively for their prosperity upon their agricultural productions. It behooves the Department to place itself at the earliest moment possible in a position to extend to the agriculturists of those territories which have, or may, come under the United States flag, the services and benefits which it renders to the farmers of the United States. The increased trade relations which may be looked for between the United States and its insular dependencies, moreover, render the conditions of agriculture in the latter and the character and extent of their productions matters of profound interest to the people of the United States. In the interest of our own agriculture, not only must the agricultural resources of these islands then be studied closely and intelligently, but the dangers which threaten agriculture in these territories in the form of plant diseases or insect pests must be made the subject of special investigation with a view to providing agriculture there with preventive or remedial agencies, and also to securing our own agriculture from the possibility of their introduction into this country. It is urgently necessary, therefore, that Congress should as speedily as possible provide a sufficient fund for the use of this Department in making such investigations as may be necessary into the agricultural resources and conditions in Hawaii, Puerto Rico, Cuba, and the Philippines.

WEATHER BUREAU.

The presence of more than two hundred naval and transport vessels belonging to the United States in West Indian waters made it apparent during the latter part of the fiscal year that the methods of gathering information of the approach of West Indian hurricanes were wholly inadequate. The safety of the fleet during the time of severe atmospheric disturbances made it imperative that precautionary measures should be taken at once.

OBSERVATION STATIONS IN WEST INDIES AND ON CARIBBEAN SEA.

A bill was therefore drafted and submitted to Congress June 16, 1898, authorizing the establishment and operation of observation

stations throughout the West Indies and along the shores of the Caribbean Sea. The provisions of the measure were incorporated in the general deficiency bill, but did not become law until after the close of the fiscal year.

Arrangements had already been made, however, to establish stations for making meteorological observations and displaying hurricane signals at Kingston, Santiago de Cuba, Santo Domingo, St. Thomas, Barbados, Dominica, Trinidad, Curaçao, and Barranquilla.

When the West Indian service is fully established twice-daily reports will be received, not only from the stations named, but also from Habana, Nassau, Vera Cruz, Tampico, Coatzacoalcas, and Merida.

Although the primary object of the extension of the storm-warning system to the West Indies was the protection of our large naval force, other considerations of great importance make it a wise and beneficent undertaking, and the improved storm-warning service will largely benefit the commercial interests throughout the West Indies.

The Central Meteorological and Magnetic Observatory of Mexico has begun the equipment of about thirty stations in the Mexican Republic, with the most approved meteorological instruments, and will establish a meteorological service similar to our own. When completed, an exchange of reports, especially those relating to the approach of West Indian hurricanes and "northers" in the Gulf of Mexico, will be effected.

NEW STATIONS IN ARID AND SUBARID REGIONS.

Congress last session made an appropriation for the purpose of increasing the number of stations in the arid and subarid regions of the country, and provision has already been made to establish stations at Kalispel, Mont.; Boise, Idaho; Mount Tamalpais, Cal.; Flagstaff, Ariz., and Fort Worth, Tex. Additional stations will soon be located at Meridian, Miss.; Macon, Ga.; Lexington, Ky.; Elkins, W. Va.; Evansville, Ind., and Escanaba, Mich. These additional stations, besides assisting in the development of agricultural and industrial interests in the States in which they are located, will be of material benefit in improving the warnings and forecasts, especially for the regions west of the Rocky Mountains.

AERIAL OBSERVATIONS.

Aerial observations by means of kites were continued during the year. It was hoped to establish at least twenty stations, but it was found that only sixteen could be completely equipped. The observers chosen for the work were called to Washington and given a practical course of instruction in the art of flying and managing kites. It is too early to express an opinion regarding the value of the observations already secured in the aerial work of the Bureau.

LAKE CHARTS FOR VESSEL MASTERS.

To increase the usefulness of the Bureau in the Great Lake region, a monthly chart was issued showing the lake ports at which storm warnings are displayed, the localities in ports where information respecting the weather can be obtained, the regions of fog, the prevailing winds, and other statistical information respecting the wind and weather on the lakes.

LOSSES TO FARM PROPERTY BY LIGHTNING.

The Bureau has begun the collection of statistics of loss to farm property, including live stock in the fields, by lightning, so as to determine the frequency of lightning stroke and the amount of property destroyed annually by that agency.

EFFICIENCY OF THE BUREAU.

The efficiency of the Bureau was fully equal to the high standard of the previous year. Four hurricanes which visited the Atlantic and Gulf coasts during the fall were duly announced. The most severe of these storms was that of October 23 to 26, which moved slowly from off the Florida coast to the vicinity of Hatteras. It there increased greatly in intensity, and caused violent northeast gales along the coast as far north as New England.

Owing to the duration of the storm in the vicinity of Hatteras, the Bureau was enabled to make a definite prediction with regard to the tide at Norfolk, Va., where, owing to the low level of the city, much valuable property is liable to damage by inundation. Cotton and other property valued at \$850,000 were removed to places of safety. As a result of the warnings issued for this storm, between 800 and 900 vessels remained in port along the Atlantic coast.

During the prevalence of one of three severe storms which passed from the interior to the eastern seaboard during November, 1897, the steamer *Idaho*, with 19 of her crew of 21, was lost on Lake Erie. This vessel, disregarding the warnings of the Weather Bureau, left Buffalo during the afternoon of the 5th in the face of storm signals which had been flying since daybreak.

A remarkably violent wind and snow storm swept over eastern New York and New England January 31 and February 1, 1898. The greatest violence of the storm was felt along the New England coast, where nearly two score mariners lost their lives and many vessels were wrecked. Warnings of this storm were sent out the morning of the 31st and given the widest possible circulation.

Early in January and February, 1898, forecasts of freezing weather in Florida were made in time to enable the residents of that State to protect their early vegetables and fruit trees. Similar notices were given regarding unusually low temperature in California.

There were five important floods during the year, and but for the timely warnings given by the Bureau the losses would have been much greater than they were.

Forecasts and warnings were at all times distributed with the utmost dispatch, and the daily press has not only greatly contributed to the success that has attended our efforts in circulating forecasts, but has rendered valuable aid in disseminating special warnings of cold waves, storm winds, frosts, etc.

There has been a great improvement in the instrumental equipment of the Bureau, and no other similar territory in the world is covered with such a complete equipment of instruments, recording climatic and meteorologic phenomena.

CLIMATE AND CROP SERVICE IN ALASKA.

An agricultural experiment station having been established in Alaska in April, 1898, an official of the Weather Bureau was sent there to organize a climate and crop service. The central station is located at Sitka, and continuous registers of wind velocity, sunshine, temperature, and pressure will be made there.

TELEGRAPH SERVICE.

At one time the Federal Government owned and operated about 5,000 miles of seacoast and frontier telegraph lines. In 1891, 633 miles of these lines, mainly on the seacoast, were turned over to the Weather Bureau. These lines enable the Bureau to receive early information of changes in weather at exposed points on the coast, to display storm warnings near several of the great highways of vessels entering or leaving our ports, and also to contribute largely to the safety of vessels navigating our coasts.

STUDY OF METEOROLOGY.

The importance of the study of meteorology in the United States has been kept in mind, especially in the assignment of observers to duty at points where there are colleges or universities not already provided with instructors in meteorology, and during the past year the courses in meteorology have been strengthened in a large number of high schools and academies.

NEED OF AN ASSISTANT CHIEF.

Almost the entire time of the Chief of the Weather Bureau has during the year been consumed in executive work, leaving him but little time to attend to other duties. That work is constantly increasing; therefore I recommend that an assistant chief of the Weather Bureau be provided for.

BUREAU OF ANIMAL INDUSTRY.**MEAT INSPECTION.**

The Bureau maintains a system of thorough inspection of meat products at one hundred and thirty-five abattoirs in thirty-five cities. This is an increase of seven abattoirs and two cities over the fiscal year 1897. The work done has greatly exceeded any former year, especially in the matter of pork products. This necessitated a large increase in the force of employees, who were obtained through examination by the Civil Service Commission. Their service has been efficient and satisfactory.

From the tables furnished by the Chief of the Bureau of Animal Industry it is learned that during the year there were 9,228,237 ante-mortem inspections of cattle, 10,028,287 of sheep, 468,199 of calves, and 31,610,675 of hogs, making a total of 51,335,398 inspections. This is a total gain over 1897 of 9,025,291 animals, divided as follows: Cattle, 1,178,212; sheep, 1,983,932; calves, 19,216; hogs, 6,043,931. The condemnations at abattoirs were 104 cattle, 741 sheep, 67 calves, and 9,679 hogs—a total of 10,591. The rejections in stock yards were 27,491 cattle, 9,594 sheep, 2,439 calves, and 66,061 hogs—a total of 105,585. The number of condemned animals at abattoirs was 3,275 fewer than in 1897, and the number rejected in stock yards was 27,247 greater. These differences show the careful work of the officials in detecting disease previous to the slaughter of the animals.

The records for the post-mortem work show 4,433,181 inspections of cattle, 5,501,675 of sheep, 245,155 of calves, and 20,936,840 of hogs. Of the carcasses condemned, 10,018 were of cattle, 3,567 of sheep, 344 of calves, and 77,579 of hogs; and of the parts of carcasses condemned, 12,591 were of cattle, 287 of sheep, 52 of calves, and 35,250 of hogs.

In addition to the above there were killed by city inspectors 1,785 cattle, 1,509 sheep, 192 calves, and 14,698 hogs which had been rejected in the stock yards by officers of the Bureau of Animal Industry.

The meat-inspection tag, or brand, was placed on 14,815,753 quarters and 968,014 pieces of beef, 5,448,477 carcasses of sheep, 217,010 carcasses of calves, 680,876 carcasses of hogs, and 394,563 sacks of pork.

The meat-inspection stamp was affixed to 4,433,569 packages of beef products, 5,163 packages of mutton, and 10,145,048 packages of hog products, of which 374,131 contained microscopically-examined pork.

The number of cars sealed containing inspected meat for shipment to packing houses and other places was 18,631.

There were issued 35,267 certificates for meat products which had received the ordinary inspection; these covered exports comprising 1,256,716 quarters, 67,120 pieces, and 735,814 packages of beef,

weighing 339,650,091 pounds; 5,163 packages of mutton, weighing 324,996 pounds; 39,212 hog carcasses and 653,564 packages of pork, weighing 244,956,482 pounds.

The cost of this work was \$409,138.09, which makes an average of 0.8 cent for each of the 51,335,398 ante-mortem inspections, besides covering all the subsequent work of post-mortem inspection, tagging, stamping, etc.

The cost of inspection has been growing gradually less year by year. The average cost per head was 4½ cents in 1893, 1½ cents in 1894, 1.1 cents in 1895, 0.95 cent in 1896, and 0.91 cent in 1897.

The number of animals inspected before slaughter is shown in the statement below. The figures for 1897 are given also as a means of comparison.

Animals inspected before slaughter for abattoirs, 1897 and 1898.

Fiscal year.	Cattle.	Calves.	Sheep.	Hogs.	Total.
1897.....	4,289,058	259,930	5,179,643	16,813,181	26,541,812
1898.....	4,552,919	241,092	5,706,092	20,713,863	31,213,966
Increase	263,861	¹ 18,848	526,449	3,900,682	4,672,154

¹ Decrease.

MICROSCOPIC INSPECTION OF PORK.

The examination of pork and pork products shows that better results are obtained by making the inspection in the carcass than when samples from cured meat are examined. The following table shows this fact quite clearly:

Comparison of inspections from carcasses and from pieces.

Samples.	From carcasses.		From pieces.	
	Number.	Per cent.	Number.	Per cent.
Class A	1,892,131	98.148	864,042	98.747
Class B	15,729	.816	5,064	.579
Class C	19,978	1.036	5,902	.674
Total	1,927,838	100	875,008	100

The samples of pork submitted for microscopic examination were classified as follows: Class A, samples in which no sign of trichinæ, living or dead, or calcified cysts are found; Class B, samples in which degenerate trichinæ cysts are found, but in which the body of the parasite is not recognizable; Class C, samples in which recognizable bodies, living or dead, of trichinæ are found. All hogs belonging to the latter class must be condemned and disposed of according to section 20 of the regulations dated June 14, 1895.

The number of certificates issued for microscopically examined pork

was 20,158, covering shipments aggregating 373,366 packages, weighing 120,271,659 pounds. Of this quantity, 698 packages, weighing 161,303 pounds, were exported to countries not exacting a certificate of microscopic inspection.

The cost of microscopic inspection was \$171,040.94, an average per specimen examined of 6.1 cents, or an average of 0.142 cent for each pound exported. This cost per pound for the inspection of pork shows a remarkable reduction from the cost in 1897, when it was 0.256 cent. The cost in 1896 was 0.264 cent; in 1895, 0.2 cent; in 1894, 0.248 cent.

The microscopically inspected pork for 1898 reached the enormous amount of 120,271,659 pounds. Only 161,303 pounds of this went to countries not requiring inspection. In 1897, 43,572,355 pounds of pork were inspected microscopically, 1,001,783 pounds of which went to countries not requiring inspection. These figures show that countries requiring inspection received from us in 1898, 120,110,256 pounds of pork, as against 42,570,572 in 1897—an increase of 77,539,784 pounds. It is worthy of note here that the amount of pork microscopically inspected in 1898 exceeded the total amount of the three previous years by 18,703,906 pounds.

The number of samples examined increased 49 per cent over last year, the expense increased 53 per cent, and the exports increased 176 per cent.

INSPECTION OF VESSELS AND OF ANIMALS FOR EXPORT.

The number of inspections of American cattle for export was 859,346, and 1,438 head were rejected; 297,719 inspections of American sheep were made and 180 head rejected. The number of Canadian cattle inspected was 19,397, of which 5 were rejected; 29,497 Canadian sheep were inspected and 38 of them were rejected.

The number of clearances of vessels carrying live stock was 971, as against 954 in 1897.

Inspectors of the Bureau of Animal Industry in Great Britain inspected cattle from the United States to the number of 381,420 and sheep to the number of 151,863; cattle from Canada, 17,164; sheep from Canada, 27,912. This shows an increase of 20,898 cattle and a decrease of 9,408 sheep when compared with the report for 1897. The number of head of cattle lost in transit in 1897 was 2,323, or 0.61 per cent, as against 907 head or 0.23 per cent for this year. The number of sheep lost in transit in 1897 was 2,676, or 1.39 per cent, as against 1,618, or 0.89 per cent, for this year.

The cost of the inspection of export animals, the supervision of Southern cattle transportation, and the inspection of animals imported from Mexico was \$101,210.55. It is estimated that half of this expense is on account of the export inspection, and, with this as a basis, the cost of inspecting the 548,419 domestic cattle and sheep exported was

\$50,605.28, or 9.2 cents per head. The number of inspections made of these animals in this country was 1,157,065, and in Great Britain 533,283, making a total of 1,690,348, the average cost of each inspection being 2.99 cents.

Following is a statement showing the inspection of domestic cattle and sheep for export, and number exported for 1898, compared with 1897:

Inspections and exports of domestic cattle and sheep, 1897 and 1898.

Year.	Cattle.		Sheep.	
	Number of inspections.	Number exported.	Number of inspections.	Number exported.
1897	845,116	390,554	348,108	184,596
1898	859,846	400,512	297,719	147,907
Increase (+) or decrease (—)	+ 14,230	+ 9,958	— 50,389	— 36,689

SOUTHERN CATTLE INSPECTION.

During the quarantine season of 1897 there were received and yarded in the quarantine division of the various stock yards 35,317 cars, containing 972,224 cattle; the number of cars cleaned and disinfected was 35,280.

In the noninfected area in Texas 225,096 cattle were inspected for the identification of brands, prior to removal to other States for grazing.

INSPECTION OF IMPORTED ANIMALS.

The number of animals imported from Mexico and inspected at the ports of entry along the boundary line comprised 177,772 cattle, 64,207 sheep, 104 swine, and 3,053 goats.

There were imported from Canada for slaughter, milk production, grazing, feeding, etc., and not subject to quarantine detention, 79,907 cattle, 184,352 sheep, 374 swine, 2,998 horses, 2 goats, 8 mules, 1 deer, and 6 buffalo, of which 385 cattle, 6,867 sheep, and 217 swine were for breeding purposes.

INSPECTION OF HORSES AND HORSE PRODUCTS.

The appropriation bill for the fiscal year 1899 contains a provision "that live horses and the carcasses and products thereof be entitled to the same inspection as other animals, carcasses, and products thereof" named in the bill. Two abattoirs have so far been established, one at Linnton, Oreg., and one at Brighton, Mass. The latter has been in operation but a few days. The former commenced operations on August 1, and during that month 721 horses were inspected, 88 of which were condemned. In September there were 905 inspections and 33 condemnations. The percentage of condemned animals

is large, and is an indication that no mistake is made in extending inspection to horses. These abattoirs slaughter horses exclusively.

Regulations are being formulated for the inspection of live horses for export. It is believed such inspection will stimulate the demand abroad for our horses, especially in England, where the question of inspection of American horses has already been discussed to some extent.

PAYMENT FOR MICROSCOPIC INSPECTION.

While the work at the abattoirs becomes more thoroughly systematized from year to year and the cost of inspection per pound of meat has become gradually less, the great extension of the work necessarily increases the total expenditures. The question as to whether the Government should continue to pay the cost of this inspection, or whether the expense should be borne by the slaughterers, is one which, in my opinion, ought to receive early consideration. As bearing upon this feature of the question, I quote from my report for 1897:

While I believe the general inspection of meat for sanitary purposes should be made by the Government, without charge to the slaughterers, the microscopic inspection to a great extent is a commercial inspection, and the cost of it could be more legitimately assessed against the trade which it benefits. If the packers paid the cost of the inspection there would be no longer any reason for declining to extend it to all who apply for it.

EXPERIMENTS WITH HOG CHOLERA.

The experiments conducted in the fall of 1897 upon hog cholera and swine plague proved so encouraging that Congress made a special appropriation for the purpose of continuing the work. The bill was late in passing, and further time was consumed in making the necessary preparations to carry on the work on a sufficiently practical scale. Material to inject about 1,000 animals was sent to the agent of the Bureau of Animal Industry in Iowa, where the first test is being made, and reports already received indicate that about 80 per cent of the animals treated were saved, while in the check herds barely 20 per cent were saved.

On account of the time required to secure a supply of this serum, the quantity so far produced has not been adequate to give sufficient data upon which to base definite conclusions; but the results so far obtained are gratifying indeed, and it is deemed advisable to continue the work another year. The production of serum is being steadily increased, and in a short time a large and regular output will be assured. It remains only to test the remedy upon a sufficient scale and to perfect the method of procedure.

A grave question now presents itself in connection with this subject. I refer to the manufacture of the serum in quantities sufficient to supply the prospective demand. The necessity for its manufacture

without the temptation inseparable from purely commercial undertakings to cheapen the product is manifest. It is obviously of the utmost importance that this serum should be produced of the requisite strength and purity until the efficacy of the treatment is thoroughly understood and appreciated and a reliable standard is established, as in the case of other remedial agents, and the interest of the public demands that this discovery, having been made by public officials at public expense, should not be diverted to private profit. It must be supplied for the benefit of all at a minimum of cost; and, under the circumstances, I can see no alternative but that the manufacture should be continued under Government control, at least for some years to come.

TUBERCULOSIS.

The study of tuberculosis, with reference to both men and animals, has been continued, and the results so far obtained indicate that experiments already begun in this line should be continued, as there is a prospect of more satisfactory results.

TEXAS FEVER.

Experiments in dipping cattle to kill the ticks which cause Texas fever were continued, with the gratifying result that a substance has been found which will destroy all the ticks on an animal at a single dipping. In order to test the experiment on a large scale, about a thousand head of cattle were dipped at Fort Worth, Tex., and thence shipped to northern Illinois and placed in pastures with susceptible cattle. The ticks were all killed by the dipping and the cattle did not communicate the fever to the susceptible cattle. An equal number were dipped at Mammoth Spring, Ark., with equally successful results. The importance of this measure can hardly be overestimated, and prominent stockmen consider that it is worth millions of dollars, both to cattle raisers below the quarantine line and to the feeders and grain producers north of the line.

These encouraging results have led to a demand for dipping stations at many other points, and arrangements are now being made for perfecting the dipping process and for securing the establishment of such stations before the next quarantine season at points convenient for shipment and inspection.

INVESTIGATION IN BLACKLEG.

The demand for blackleg vaccine has increased very much during the year. More than 355,000 doses have been sent out. The results received from its use indicate that the percentage of loss in herds has been reduced from 10 to 20 per cent to less than 1 per cent. This means not only an immense saving to cattle raisers, but, if generally used, will tend to eradicate the disease completely.

DIVISION OF CHEMISTRY.

The Division of Chemistry during the past year has continued its work on the composition and adulteration of foods. An elaborate bulletin, treating of the composition of cereals and all cereal products, represents the results of the principal amount of work in this direction. Another bulletin is devoted to the composition and uses of Indian corn, and this bulletin was prepared especially for presentation at the Third International Congress of Applied Chemistry in Vienna, which met in July, 1898. The bulletin has proved of such interest to Europeans that permission has been asked for its translation both into Italian and French.

OFFICIAL AGRICULTURAL CHEMISTS.

The cooperation of the Division with the Association of Official Agricultural Chemists has continued with mutual benefit. As a result of the systematic study of methods of investigation of soils, fertilizers, and agricultural products, the United States has now a uniform method of research, everywhere practiced and recognized as official by both trade chemists and the courts of justice. European nations have been impressed with the value of this cooperative work, and are now organizing similar associations. In view of these facts, the propriety of recognizing in some official way the Association of Official Agricultural Chemists is evident. Congress should enact some special recognition of this association, so as to establish more fully its official character and render its proceedings more valuable, not only in scientific matters, but also in the courts.

STREET SWEEPINGS, ETC.

The importance of disposing of street sweepings, garbage, and other refuse of cities has engaged the attention of the Division, and a considerable degree of progress was made in studying the agricultural value of these matters.

STUDY OF TYPICAL SOILS.

In the study of typical soils in the vegetation house it has been developed that meteoric influences other than those relating to precipitation have a great influence on crop production. The solar influences are evidently of great importance, and the distribution of solar heat is a factor not to be neglected. Excessive or deficient temperatures at critical stages of the growth of a crop are factors of prime importance in final products.

COOPERATIVE WORK.

The Division has been engaged in important cooperative work with the Treasury Department and other Departments of the Government.

The Chemist was appointed, with my approval, by the Secretary of the Treasury, chairman of a commission charged with the work of preparing the regulations for determining the amount of duty to be collected on imported sugars. The commission also instituted a series of investigations in the several ports of entry to investigate the manner in which the regulations were carried out. The Chemist, as a member of the international commission for unifying methods of sugar analysis, presented at the Vienna congress an important contribution in regard to this desirable agreement.

A further cooperation of the Division with the Treasury Department resulted in obtaining data in the examinations which were conducted of a character that served to save the Treasury a very large sum of money claimed as rebates under a provision of the law permitting the repayment of taxes collected on alcohol which was used in certain arts. Important cooperation of the Division was also secured in connection with the Post-Office, State, and War Departments. The Division of Chemistry holds itself in readiness to comply in the shortest possible time with all reasonable requests of the other Departments for chemical services.

SUGAR-BEET AND FOOD INVESTIGATIONS.

The Division continued during the year its investigations of the possibilities of producing high-grade sugar beets in various parts of the United States. As a result of the extensive chemical studies conducted, the area suitable to the production of the best beets has been more definitely delineated. A few years more of studies of this kind will mark out in a practical manner the areas where beets of the highest grade can be produced.

In the work on food adulteration interesting investigations have been instituted in the examination of food products imported from foreign countries. Critical studies of agricultural imports from the countries which exclude similar imports from our country on the ground of adulteration or unwholesomeness will be continued.

NEW LABORATORY.

The old quarters used by the Division of Chemistry having proved inadequate for the rapidly increasing work of the Division, a new laboratory has been leased, where more ample facilities will be afforded.

DIVISION OF ENTOMOLOGY.

GENERAL INVESTIGATIONS.

General investigations have been carried on in this Division through the year upon insects injurious to garden crops, to shade trees, and to citrus trees and fruits. The general experimental work, with remedies,

has comprised especially careful investigations of the availability of hydrocyanic-acid gas in the disinfection of seeds in bulk and of plants and nursery material, and further experiments with arsenicals and various oil mixtures in order to determine their effects on plants in dormant condition and in foliage. One of the expert assistants of the Division visited Europe for the purpose of studying the methods of controlling injurious insects in the Old World, with a view to determining their value and applicability to our own country, and in order to study the conditions of climate, forest growth, and method of culture in their bearing on the abundance or absence of injurious insects and the methods of prevention of insect injury.

SPECIFIC INVESTIGATIONS.

Specific investigations of importance may be mentioned under the following heads:

WORK ON INSECTS FROM ABROAD.

Careful investigation of the so-called Morelos orange fruit worm, a species which it is feared may be accidentally introduced into the orange groves of California and Florida, has been made. The distribution of this insect in Mexico was unknown even to Mexicans, and the fears of this country were considered by Mexicans to be largely imaginary. This season's investigations, however, prove that this destructive fruit worm is distributed throughout all of Mexico east of the Sierra Madre Mountains, and that it may at any time be introduced into California in early fall oranges imported from that region.

A preliminary attempt has been made to introduce from southern Europe into California an insect which is responsible for the fertilization of the Smyrna figs of commerce. The Entomologist visited California in the spring of 1898 and found that conditions were ripe for such an attempted introduction, and an agent in Europe will, during the coming year, endeavor to take the necessary steps to bring about this introduction, which, it is hoped, will result in the production by California of a fig equal to the Smyrna fig.

A successful importation has been made of an important parasite of certain large scale insects.

THE GIPSY MOTH.

By direction of Congress, the Entomologist made a careful study of the work which has been done by the State of Massachusetts against this imported insect pest, and has reported that after careful field study extending over practically the whole summer, he is convinced that Massachusetts is taking the proper course in making large appropriations to exterminate the insect, and that the work is being carried on in a manner worthy of all praise.

THE MEXICAN COTTON-BOLL WEEVIL.

The work which has been carried on during the season has developed a new and important spring remedy against this insect, and this, together with earlier results achieved by this Division, have now put Texas cotton planters into possession of a knowledge of how to economically keep their fields free from this injurious species, which was recently thought to threaten the destruction of the entire crop of the State.

CHINCH BUG AND HESSIAN FLY.

During the year investigations have been made upon these two well-known and very injurious insects, and a comprehensive bulletin upon each species has been completed and is now ready for the printer.

OTHER INVESTIGATIONS.

Other important work carried on under this Division during the year has included the sending successfully of beneficial species to foreign Governments suffering from outbreaks of the white or fluted scale, the preparation of an account of the work accomplished during the past two years against the San Jose scale, an investigation of the injurious grasshoppers of the Western States, work upon remedies to be used against the house fly, suggested by the growing belief in the importance of this insect as a carrier of disease, work upon the geographic distribution of injurious insects of the United States, and experimental work in apiculture.

BIOLOGICAL SURVEY.**LIFE ZONES AND CROP ZONES.**

With a view to determining the areas best adapted for various crops, the Biological Survey has been engaged for several years in collecting data for mapping the natural life zones of the United States. A detailed study of the distribution of the native animals and plants has been made in the belief that areas inhabited by indigenous species coincide with those most suitable for certain varieties of fruit and cereals and for breeds of domesticated animals. This investigation has now progressed far enough to permit the publication during the past year of a revised map of the life zones of the United States and two reports containing the results, of more general interest to farmers and horticulturists.

One of these reports comprised a description of the life zones and crop zones of the United States, with lists of the more important varieties of fruits and grains adapted to each area; the other an investigation of the geographic distribution of some of the more important cereals. The latter bulletin, based on reports from more than a thousand grain growers, showed the areas in which about thirty of the

more important varieties of corn, wheat, and oats are now profitably cultivated, and the regions where these varieties may be expected to succeed. Field work was continued during the year in Washington, Oregon, California, Nevada, British Columbia, and northern Mexico for the purpose of obtaining data for use in outlining the life zones with greater precision than had hitherto been possible in these regions.

ECONOMIC RELATIONS OF MAMMALS AND BIRDS.

The Biological Survey is often called upon to determine the value of birds and animals to practical agriculture. It is in effect a court of appeal in which complaints are investigated concerning those species which are considered injurious to crops. A careful study is made of the food of useful and injurious birds and mammals, and thousands of stomachs of birds are examined in the laboratory. Two thousand three hundred and twenty-nine stomachs, mainly of sparrows, swallows, and woodpeckers, were examined during the year. A report has been prepared on the native cuckoos and shrikes, and reports on flycatchers and native sparrows are in preparation. Several of the latter birds feed largely on weed seed during the winter, and it is a matter of no little interest to determine how far they can aid the farmer in checking the increase of noxious weeds. The importance of this work is emphasized by the increasing demand made on the Department for information and publications on birds, in consequence of the recent widespread popular interest in ornithology.

FUTURE WORK.

As the work of the Biological Survey becomes more generally known, the demands for information, maps, and reports increase far more rapidly than the means for meeting them. Biological maps of certain States and maps showing the distribution of particular mammals or birds are sought not only for reference but for purposes of instruction. Local biological surveys have been planned or have already been inaugurated in several of the States, and the Department has been appealed to for assistance in this work, but it has thus far been unable to actively cooperate through lack of sufficient appropriations for the purpose.

The work for the immediate future comprises a combination of field work outlining the life zones of the Pacific coast, investigations on varieties of fruits, vegetables, and field crops similar to that already undertaken in the case of cereals. An investigation which is of special interest at this time is a thorough examination of the fauna and flora of the tropical region which lies along our southern border and enters the United States at several points. Our new island possessions are entirely within this region and present an inviting field for

exploration. As their resources become more generally known the question of what semitropical or tropical products can still be profitably grown in Florida and the Gulf States is likely to become a very important and practical one in several of the Southern States.

DIVISION OF VEGETABLE PHYSIOLOGY AND PATHOLOGY.

The work of this Division is carried on with a view of obtaining additional light on the conditions governing the growth and productiveness of cultivated plants, with special reference to diseases, nutrition, and development of new and improved sorts by breeding and selection.

RESULTS OF INVESTIGATIONS.

During the year valuable knowledge was obtained relative to increasing the sugar and starch producing power of plants and the effect of soil foods on their growth and productiveness.

The study of diseases of truck and garden crops and of crops grown under glass has been continued, and methods of preventing several of the most destructive, such as black rot of the cabbage and the leaf-spot disease of melons, celery, and violets, given to growers of such crops through bulletins or by correspondence.

Smuts and rusts of cereals have received much attention. The latest and best methods of preventing smut were given to the public through a Farmers' Bulletin, and much valuable knowledge relative to rust was gained.

In the study of diseases of citrus fruits and other subtropical plants special attention was given to sooty mold and blight of the orange and blight of the pineapple.

On the Pacific coast peach-leaf curl, apple canker, a bacterial disease of English walnuts, and a new bacterial bulb disease have received especial attention. Important results have also been obtained from a study of other diseases prevalent in different parts of the country on the apple, pear, peach, plum, and other fruits, on crops of various kinds, and on forest and shade trees.

HYBRIDIZING.

The work of hybridizing the sweet orange with the hardy trifoliate, with a view of obtaining a variety resistant to cold, was pushed, and about one hundred and fifty hybrids obtained. In addition to this about one thousand hybrids of other citrus plants were obtained. Considerable work was done in crossing pineapples, and as a result two hundred and fifty-nine hybrid seedlings were secured. These produced plants of great vigor and confirmed the belief that by this means there may be produced fruits which will be larger, of better quality, better shippers, and more resistant to blight. Similar work was carried on with pears and with wheat and other crops.

ROUTINE WORK.

About six thousand letters relating to diseased plants and other lines of work were answered during the year, and about twelve thousand specimens of disease-producing fungi, representing six hundred different species, were prepared for distribution to the experiment stations. Much time was also devoted to the preparation of bulletins and papers on results of investigations.

SEED DISTRIBUTION.

Finding it desirable to separate the seeds to be distributed by the Department into three classes and to place the distribution of each class of seeds under the control of a Division or Section, which in a greater or less degree is interested in the character of the seeds distributed, I assigned to the Seed Division the distribution of vegetable, flower, and field seeds; to the Section of Seed and Plant Introduction the collection and distribution of foreign seeds, and to the Division of Chemistry the distribution of sugar-beet seed, the entire work of seed distribution being placed in charge of the Assistant Secretary of Agriculture.

Every effort is made to so place the seed that the best results may be obtained. Nearly all requests were complied with, none being refused when it was possible to send seed. In a number of cases special purchases of seeds not included in our contract were made for that purpose.

With few exceptions the reports from persons who have received and planted the seed have been favorable.

While it is too early to determine the value of the seeds introduced from foreign countries, I am satisfied that some varieties will prove very desirable.

The vegetable, flower, and field seeds were distributed by our contractor at Toledo, Ohio, under the supervision of the special agent and with the aid of clerical help sent from this Department.

CONGRESSIONAL AND MISCELLANEOUS SEED DISTRIBUTION.

The seeds distributed under direction of the Seed Division during the fiscal year ending June 30, 1898, aggregated 15,702,914 papers and cloth bags, as follows: Vegetable, papers, 14,243,527; flower, papers, 1,254,037; field, papers and bags, 205,350.

Of the 15,702,914 papers and bags of seeds distributed, 13,599,586 papers and cloth sacks of vegetable and field seed were distributed to Senators, Representatives, and Delegates in Congress (by their allotments); 751,170 papers of flower and vegetable seeds to correspondents of the Division of Statistics; and 889,460 papers and bags of vegetable, flower, and field seeds to the State granges. The remainder were distributed to Weather Bureau observers, experiment stations, etc.

DISTRIBUTION OF FOREIGN SEEDS AND PLANTS.

Prof. N. E. Hansen was appointed a special agent of the Department for the purpose of securing foreign seeds and plants valuable for introduction into this country. Under the direction of the Section of Seed and Plant Introduction, Professor Hansen during the past year visited portions of Russia and Siberia and succeeded in collecting 57 varieties of vegetable seed, 289 of melon, 75 of fruit and berry plants, 150 ornamental plants, 70 wheat, 14 barley, 20 oats, 6 rye, 70 forage plants, 5 oil-producing plants, and a large number of miscellaneous seeds of desert plants, etc.

Upon arrival, these seeds and plants were put up into about 5,000 packages by the Section of Seed and Plant Introduction and sent out largely to State agricultural experiment stations, and to such reliable cultivators as had shown a willingness to cooperate with the Department by making reports as to the success of these imported plants.

While it is too early to predict the value of most of the introductions, the most promising are a variety of alfalfa, seedlings of the Siberian apple (imported for experimenting in the Dakotas), a new orange-fruited raspberry, and a Russian sand vetch.

DISTRIBUTION OF SUGAR-BEET SEED.

In the distribution of sugar-beet seed, they were sent to the sections that were thought best adapted to their use. The agricultural experiment stations were included in the distribution, and persons to whom sugar-beet seed were sent were advised that the State experiment stations would make analyses of the sugar beets grown in each State. Very cordial cooperation has been brought about between the Department and the State experiment stations.

The sugar-beet seed were purchased from Vilmorin, Andrieux & Co., in Paris, and from Dippe Brothers, in Quedlinburg, Germany, and distributed by the Division of Chemistry. In all, 34,436 pounds of seed were purchased, and partly distributed in bulk and partly in packages containing about 18 ounces each. Large quantities were distributed by Members of Congress, and 40 pounds of extra high-grade seed were distributed among experiment stations for use in the production of seed.

SECTION OF FOREIGN MARKETS.

In the Section of Foreign Markets a radical departure was made in the study of our relations with foreign markets by promptly diverting it to the field opened by the prospect of changes in Hawaii and the West Indies. The advantage of this was demonstrated by the demand for publications in that connection.

REPORTS ON COMMERCE OF HAWAII, SPAIN, AND PUERTO RICO.

A report on the commerce of the Hawaiian Islands was issued during the discussion of annexation. It covered the past ten years and gave special attention to trade with the United States.

When war with Spain was imminent, a rapid investigation of the extent and nature of the commerce of the people of that country was made. By quick and intelligent action information was obtained from Spanish official reports showing the foreign trade of Spain in detail, and the amount and direction of shipping under the Spanish flag. This information was made public at the critical moment, just preceding the declaration of war. It was followed a few days later by a more detailed statement of the trade between Spain and the United States.

The likelihood that Puerto Rico would become a possession of this Government called for a statement of the trade relations of that island, and it was made. Full details were presented of the exports and imports of the island. These furnished a basis for estimating its productive capacity and its requirements from other places. The statistics were from Puerto Rican official sources, and as they were made public for the first time were particularly valuable as well as timely.

REPORTS ON TRADE WITH AUSTRIA-HUNGARY.

Reports were issued during the year on the foreign trade of the United States in agricultural products and on the wheat production of Austria-Hungary. In the first of these the classification of agricultural imports and exports was carefully revised and a comprehensive and instructive presentation of the important facts was made. The demand for the report on foreign trade in agricultural products was so strong that the essential information was embodied in a circular, of which 85,000 copies were distributed.

In compliance with a request from the Secretary of State, much time was devoted to the compilation of information for the use of the special commissioner appointed to negotiate reciprocity treaties.

OFFICE OF ROAD INQUIRY.**EFFORTS FOR GOOD ROADS.**

The problem of securing good roads continues to be a very important branch of work. Publications upon the subject of the best methods for road improvement have been distributed freely. Care has been taken to send them where they would be most effective in stimulating activity in the movement. Representatives of the Office have attended many important meetings for the discussion of roads, and in this way valuable information has been both gathered and disseminated.

In localities where construction of roads according to the most approved methods has been in progress a representative of the Department has made a study of the operations and extended such assistance as was possible. The Office of Road Inquiry has also actively cooperated with two of the State agricultural experiment stations in spreading the work of good roads. The road laws of several of the most progressive States have been collected and studied.

These efforts have met with hearty appreciation in every direction, and there has been a steady increase in the demand for assistance. Both country papers and the metropolitan dailies have become interested in the movement and have printed very much upon the subject, in many instances reproducing Department circulars and bulletins in full.

OBJECT-LESSON ROADS.

The object-lesson road at the Rhode Island Agricultural College has been completed, and a report of the details of the work, along with the results of other inquiries, will be presented in the Yearbook for 1898. Owing to lack of funds it has been impossible to comply with calls for similar aid elsewhere, and it has been necessary to discontinue these object lessons in connection with agricultural colleges and experiment stations, although many of these institutions are still calling for aid. They are ready to bear most of the expense, asking of the Department only the payment of freight on machinery and of part of the salaries of experts. The help given from this Department usually proves sufficient to secure the financial support of the towns and farming communities in the vicinity of the experiment. Numerous letters received by the Office of Road Inquiry testify to the great value of these cooperative experiments. Everywhere the plan meets with the highest commendation, but it can not be extended without an additional appropriation.

STEEL ROADS.

The aim of the Office of Road Inquiry is to cooperate with people of the several States in making the best possible use of material within their reach in road making. Large areas in many of the States have no gravel, rock, or other hard material with which to make roads. I have had experiments made during the present year with steel as extensively as our means would permit.

An experiment of this kind is being conducted at Cleveland, Ohio. A section of 500 feet of steel track has been laid on a street in the suburbs where the traffic is heavy, and its value is already generally acknowledged. A sample steel road 510 feet long has been laid upon the grounds of the exposition at Omaha. It is proposed to make traction tests upon this track to show how much less power is required to move a load over such a road.

The steel road is not excessively costly by comparison with other roads and will last much longer with less repair, and is probably the most economic road for localities where material is not obtainable for macadamizing.

SENTIMENT IN FAVOR OF GOOD ROADS.

The growth of sentiment in favor of good roads is shown by the passage of progressive laws in New York, Pennsylvania, and other States, and by the appointment of a highway commission in Maryland, and also by the reports of increased sales of road-making machinery.

DIVISION OF AGROSTOLOGY.

EXPERIMENTS IN THE GRASS GARDENS.

Through the efforts of this Division we are learning the needs of the several sections of the country and the forage problems which they have to meet. We are acquiring a better knowledge of the distribution and value of our native grasses and forage plants, as well as the peculiar conditions of soil and climate best suited to their growth. More than 500 varieties of grasses and forage plants valued for forage have been grown in the grass garden on the grounds of the Department during the past season. Visitors from all parts of the country have been much interested in this exhibition, which has afforded many lessons, not only of interest but of real practical value.

The garden contains plats of grasses suitable for lawns, besides many species from the East and from the South, and especially from the West, all growing together with apparent success, and it is interesting to note the peculiar habits of the grasses of the moist and wooded regions of the East and those of the arid, treeless regions of the West as here displayed. A large number of leguminous plants have been given a place in the garden, and one of the most interesting experiments has been a trial of alfalfa grown from seed obtained from more than twenty different sources. Trial samples of these seeds were sent to a large number of experiment stations who volunteered to undertake comparative experiments in their cultivation. Up to the present time it has not been possible to detect any marked variation in the plants grown. Turkestan alfalfa, the seed of which was introduced last year in large quantities from Russia, has made a remarkable growth in some of the experiments conducted in the West. At North Yakima, Wash., it made a growth of over 3 feet in seventy-nine days, sending up many stems from each root. It is believed that this alfalfa will prove to be more hardy than the ordinary sort, and it may be distinguished by minute hairiness on the under surface of the leaves.

Many varieties of grasses and forage plants have been tested at the grass garden at Knoxville, Tenn., during the year. It has, however,

been thought best to discontinue official connection with this garden and select a station farther south, which shall be more typically Southern in its character, both in soil and climate. The problem in Tennessee is not so much what can be grown as how to grow the largest amount of the best quality with the least expense, problems which the agricultural experiment station at Knoxville is now well prepared to solve.

INVESTIGATIONS FOR THE IMPROVEMENT OF FORAGE RESOURCES.

In connection with the investigations in the Southwest two stations have been established, one at Abilene and one at Channing, the former presenting conditions characteristic of the center of Texas and the latter of the great region of northwest Texas, known as the Panhandle. The experiments carried on at these stations were made with a view of determining how the cattle ranges may be improved by practical methods. At the station at Abilene more special lines of investigations and experiments are being carried on, especially in the way of testing varieties which may be suited to that region.

Comparative work of the Division is being performed by many volunteer experimenters, especially among the more intelligent farmers in Colorado, Texas, Wyoming, Montana, and Idaho. The object of these experiments is the introduction of new or little-known and desirable hay and pasture grasses, as well as soiling crops. A number of the more progressive ranchmen and stockmen of the Northwest have agreed to devote from 1 to 5 acres of cultivated land to the more promising native grasses or those introduced from foreign countries, seed of which we may be able to furnish them.

Seeds of grasses and alfalfa imported from Russian and eastern Asia were sent in amounts sufficient to sow from one-twentieth of an acre to an acre of each variety to 479 parties who had previously agreed to give them careful cultivation and report fully at the close of the season the results obtained. The data thus secured can not fail to be of great interest and value to all interested in the improvement of the forage resources of our country. Eleven hundred packages of seeds of native grasses, salt bushes, wild clovers, wild beans, and lawn grasses, mostly collected by the employees of the Division while in the field, were distributed to our correspondents, who expressed a desire to aid the Division in its investigations.

Field investigations in the States along the Gulf coast have been carried on during the past two seasons and one report upon the work done in this section is now in the hands of the printer. Work, as already indicated, has been carried on in the Southwest, and in the Northwest investigations have been made by special agents, whose reports have already been published.

The field work so far has been confined to the Atlantic slope, but there is being manifested among the farmers and ranchmen of the

Pacific coast a marked interest in grass and forage-plant questions, and a demand for an extension of our work along these lines in the States west of the Divide is now being made.

THE GRASS COLLECTION.

Over 5,000 specimens of American grasses have been identified during the year and nearly 3,000 sheets of herbarium specimens mounted and added to the National Herbarium. The grass collection now in the Department numbers over 30,000 sheets.

DIVISION OF SOILS.

The Division of Soils has continued the investigation of the physical properties of soils and their relation to crop production, and work has now been started upon the mapping of soils on a scale of 4 inches to the mile, to be published probably on a scale of 2 inches to the mile. These maps will show in great detail the soil areas adapted to the different agricultural crops. Considerable advance has also been made in devising methods of investigating soil conditions where crops suffer, or where the soil conditions are not well adapted to crops which the location and markets demand.

RECORDS OF MOISTURE CONTENT OF SOILS.

Records have been continued of the moisture content of some of the principal soil areas in the country with the electrical method of moisture determination. As the soil is the immediate source of the water supply of plants, this record becomes an essential part of climatology, and it seems probable that this work of the Division of Soils, in connection with the present work of the Weather Bureau and of the Division of Statistics, will develop a distinctively new line of agricultural climatology. This work is closely related to the work of the Weather Bureau, but is supplementary to it. It includes the record of evaporation to which the plant is subjected, the water supply maintained by the soil for supplying the loss due to this evaporation, and the intensity of the actinic and heat radiations which influence the physiological activities of the plant. Numerical values can be given to the evaporation and to the soil-moisture conditions, so that it is possible to express numerically the relative conditions of plant growth from day to day so far as these two important factors of evaporation and water supply are concerned. This will add greatly to the practical value of our knowledge of climatology.

INVESTIGATION OF ALKALI SOILS OF YELLOWSTONE VALLEY.

The electrical method of salt determination in soils has been used in the exploration and investigation of the alkali soils of the Yellowstone Valley. An examination was first made of the general conditions

in the valley, and then a very minute study of a section of land which was just being ruined by the rise of alkali. This examination amounted to an underground survey of the field, and maps have been made showing the distribution of alkali at different depths. A great number of borings were made to a depth of 10 or 15 feet, and salt determinations were made in every 6 inches or each foot in depth. Accurate maps have been made showing the amount and distribution of the alkali at several of these depths.

The result of this investigation will be issued in the form of a bulletin. Briefly, it was found that in the original prairie soil above the ditch there is not sufficient alkali to be injurious to vegetation. The amount of alkali was greater in the lower depths of the subsoil. As a rule, water is used in excess on all of these lands under irrigation, and to such an extent that it accumulates in the subsoil. When the depth to standing water is not more than 2 feet from the surface, alfalfa turns yellow and dies out. In all cases the first injury was from the accumulation of water from excessive applications through irrigation. Where this water remains for some time in the subsoil the alkali leaches down through seepage from higher lands, and is brought up from the subsoil and accumulates at the surface in quantities sufficient to prevent the growth of cultivated plants. Other problems of great value to the agriculturist were worked out in the course of this investigation. Such work will be invaluable in the treatment of alkali soils.

This underground survey of the alkali lands has given the most important information in regard to the amount and distribution of the soluble salts and the way in which they accumulate in certain localities through overirrigation.

TOBACCO INVESTIGATIONS.

The tobacco business has become very highly specialized. Each market has its own requirements, each class of users has its own particular style, and each season brings some change of style which must be met by the tobacco grower. There is a great deal of competition in our own country and very serious competition from abroad, especially from Cuba and Sumatra. In several of our tobacco districts the acreage has been reduced one-half in the past ten or fifteen years. Some of the districts have almost completely abandoned the culture of tobacco. On the other hand, several new localities are being opened, with prospects of good prices for the better grades of wrapper leaf both for cigar and manufacturing purposes. The best we can do, however, in the cigar leaf is far below the product of foreign countries. The Cuban filler sells for ten times as much as the Pennsylvania and Ohio filler; the Sumatra wrapper is worth ten or fifteen times as much in the markets as the Connecticut wrapper. To meet this competition it is absolutely necessary that our farmers should

have at their disposal a thorough knowledge of their own conditions and of the conditions of the soil, climate, methods, and labor conditions of competing districts.

SOIL MAPS OF THE TOBACCO DISTRICTS.

One of the first necessities in the development of a new district or in the improvement of an established district is an accurate soil map of the locality, on which the soils adapted to the different types and grades of tobacco are plainly shown. In all of our tobacco districts there are large areas of land sown to this crop which are not adapted to a good grade of tobacco. There are also large areas well adapted to a fine grade of leaf which have never been used for this purpose. Enough is known of the relation of soils to tobacco to warrant the preparation of very accurate maps, indicating the character of the tobacco from each of the soil areas in the district. After these types have been established and the soil areas have been mapped, the experiment stations can take up a study of the cultural methods adapted to each of the types of soil. In this study of the influence of the soil upon the quality of the leaf it is important to extend the study to all localities, and to gather information from Cuba and Sumatra as well as from Kentucky, Virginia, Pennsylvania, and Connecticut. This is work that the experiment stations can not do for themselves.

CURING AND FERMENTATION.

Among the most important lines of work which the Department can take up for the tobacco grower is the study of the diseases in the tobacco bed and the comparatively few diseases in the field, and particularly the study of curing and fermentation. A large amount of research work has been done, particularly in Germany, in the fermentation of tobacco, but very little is yet known of the changes which go on in the process or regarding the specific agents which bring about these changes. So much information and practical benefit have been derived from a study of butter and cheese, in the control of the ferments and bacteria which produce the texture and flavor of the product, that it is very desirable that similar knowledge in the curing and fermentation of tobacco and similar control of the finished product should be secured. This work will require very careful study of the changes in the fermentation pile in the different tobacco districts.

It is important to know exactly to what organisms the peculiar flavor and aroma of the tobacco is due; what influence is exerted by the character of the leaf, by climatic conditions, and by methods of manipulation. This work can only be thoroughly done by systematic working in different tobacco districts in our country with different varieties of tobacco and different climatic conditions. It should certainly

embrace a study of fermentation in the tobacco of Cuba and of Sumatra. If our tobacco growers are to attempt to raise a product equal to that of Cuba and Sumatra, and if this is to be done not by chance, but through systematic, scientific investigations, then the soils and other conditions of growth must be thoroughly understood and the fermentation changes carefully worked out in Cuba and Sumatra. It is necessary, therefore, that a soil expert and a bacteriologist extend their work to these foreign countries.

In view of the great importance of the tobacco industry in this country and of the very important practical results which are likely to accrue from the investigation of the subjects herewith presented, I have submitted in my estimates to Congress a special appropriation for tobacco investigations.

DIVISION OF FORESTRY.

CHANGE IN CHIEF OF DIVISION.

At the end of the fiscal year the creation of the New York State College of Forestry and the election of Mr. B. E. Fernow to the directorship created a vacancy in the position of Chief of the Division, which Mr. Fernow held for twelve years, and Mr. Gifford Pinchot, of New York, was appointed his successor.

TREE PLANTING IN THE TREELESS REGIONS.

Believing that the attention of this Division should be directed rather more to the tree-planting interests of the treeless regions, I directed the discontinuance of the series of investigations which had in view a better knowledge and use of our economic timbers, in order that the funds might become available in the aforesaid direction. The forest-planting experiments in cooperation with the State agricultural experiment stations were, therefore, prosecuted more vigorously and extended to Texas, Oklahoma, and Montana, besides adding another station in Pennsylvania, where the methods of reclothing cut-over lands were to be demonstrated.

By my direction a plan was elaborated for the introduction of species adapted to dry climates, and a competent agent appointed to carry out the plan, which contemplates the establishment of a number of arboreta in our dry regions, in which are to be assembled such trees and shrubs from all parts of the world as might eventually prove adapted to these regions. One of the most useful lines of work has been a canvass of the forest conditions of the State of Wisconsin, in cooperation with the State geological survey, which has brought out the significant fact that, through careless lumbering, followed by destructive fires, over 8,000,000 acres of that State have been rendered practically useless and one-half that area a veritable desert as far as present economic conditions are considered.

TIMBER PHYSICS INVESTIGATIONS.

The accumulated data of the investigations in timber physics have been worked over in part and yielded some most important results, among which the law that the strength of a beam at the elastic limit is equal to the compression strength of the material, which was established by the tests of the Division, will influence the practice in the use of wood for construction most advantageously.

PLANS FOR THE COMING YEAR.

The plans for the Division of Forestry, approved by me, for the coming year cover the following lines of work, all of which are directly related to the welfare of our people:

Practical assistance to farmers, lumbermen, and others in handling private forest lands. Since these lands exceed by far in area those of the Government and the States combined, woodland in farms alone covering more than 200,000,000 acres, this attempt to increase their present as well as their future value, and thus secure their preservation, has before it a field of wide usefulness.

An attempt to find the best trees for planting in the so-called treeless regions of the West, a matter of far-reaching importance to a very large percentage of the farming population of this country.

A study of the history, nature, and ways of action of forest fires in the United States and their effect on the composition and reproduction of forests. The prime object of this work, which covers a field practically untouched until now, is to develop better methods of preventing and extinguishing these fires than have yet been employed.

A study of the effect of lumbering on the forests, in order to devise improved methods advantageous both to the lumberman and to the forest. Combined with this work, detailed investigations of the growth of trees of special commercial importance will be made, with the object of ascertaining whether and how much it will pay to hold timber land for future crops.

Investigation of the timber resources and requirements of Alaska, Cuba, and Puerto Rico, which is needed to meet the numerous requests for information made to this Department.

In addition, a classified series of forest photographs, intended to furnish illustrations of the results of the various lines of work, will be begun during the year.

The extremely practical character of these lines of work is evident. Their popular standing is indicated by the fact that the assistance of the Division has been asked in the handling of nearly a million acres of forest land, under an arrangement by which, in the case of all but farmers' wood lots, the Department is relieved of all expenses except salaries for its agents in the field.

In view of these facts, I have been impelled to lay before Congress the urgent need of a considerable addition to the appropriations at my disposal for the use of the Division of Forestry.

OFFICE OF EXPERIMENT STATIONS.

THE STATE EXPERIMENT STATIONS.

The examination of the work and expenditures of the agricultural experiment stations by the Office of Experiment Stations during the past year has shown that these institutions are, as a rule, working more thoroughly and efficiently than ever before for the benefit of American agriculture. More than six hundred persons are employed in the work of administration and inquiry. About four hundred reports and bulletins were issued by the stations in 1897, which were directly distributed to over half a million addresses, besides being widely reproduced in the agricultural and county papers. The appropriation of \$720,000 from the National Treasury for the support of the stations was supplemented by State funds aggregating over \$400,000.

The need and value of scientific researches on behalf of agriculture are now very clearly understood, and the number and importance of institutions organized for this work are constantly increasing in all parts of the world. Nowhere has so comprehensive and efficient a system of experiment stations been established as in the United States. In the scope and amount of their operations, and in the thoroughness with which the useful information they obtain is disseminated among the farmers, our stations are unsurpassed. During the ten years which have elapsed since the Hatch Act went into effect a very large amount of accurate information of direct practical benefit to our farmers has been published by the stations. Not only have the numerous bulletins and reports of the stations been freely distributed in all parts of the country, but many valuable books largely based on the work of the stations have been written for the farmers' use, while the agricultural press has busily collated and disseminated a vast mass of information directly relating to the work of the stations or supplementary to it. The contrast between the correct information regarding the principles and practices of his art easily obtainable by the farmer of to-day and that available for his predecessor of a generation ago is very wide and striking.

NEED OF MAKING OUR STATIONS STILL MORE EFFECTIVE.

The general success of our agricultural experiment stations makes it all the more important that they should everywhere be organized and conducted with a view to securing the most economical and efficient service for the benefit of agriculture. It were well if the farmers in every State and Territory were alive to the importance of making each and every experiment station a thoroughly effective institution for agricultural research. There are certain principles which experience

has shown must be followed in the management of stations if they are to be most highly useful. Attention has been called to these from time to time in the reports of the Department, but there is still need to urge upon appointing officers, governing boards, and all the friends of agricultural progress that, in order to make the experiment stations what they ought to be, they must be organized on a permanent basis, and their plans of work must be carefully made and carried out by thoroughly trained experts, who are so circumstanced that they can give time and energy in full measure to the research work.

Political considerations should have no place in the choice and retention of station officers, college duties should not be allowed to encroach on the time set apart for original investigation, and the compilation of old information should always be made secondary to the acquirement of new knowledge. Our farmers are worthy of the best that science and expert skill can win for them out of the realm of the facts and principles which nature will reveal to the diligent student of her mysteries. To divert from their highest and best uses any of the funds which the people have freely given to bring the aid of science to agriculture is most reprehensible. The stations which are held in the highest honor alike by scientists and farmers are those in which there has been most original and thorough work.

The stations are not the only means for the education of the farmer. Agricultural colleges, farmers' institutes, boards of agriculture, and various other agencies have been established to instruct the farmer regarding the present status of agricultural science as applied to his art. It is the business of the experiment stations, on the other hand, to advance knowledge of the facts and principles underlying successful agriculture and to teach the farmer new truths made known by their investigations. The act of Congress creating the stations clearly defines their functions to be the making and publishing of original investigations. Wherever a station has neglected this and merely endeavored to educate the farmer, we find a weak station, and wherever a station has earnestly devoted itself to original investigations, we find a strong station. The station may very properly lend its assistance in strengthening the influence and work of the educational agencies established for the farmers' benefit, but it fails to fulfill its real mission when it resolves itself into a bureau of information or devotes a large share of its energies to the compilation of popular treatises on agriculture. It is gratifying to observe that the original investigations at our stations are increasing in number and improving in quality. In some places, however, there is still need of decided changes in policy and work.

WORK OF THE OFFICE.

In connection with its supervision of the expenditures of the experiment stations, representatives of this Office have visited the stations

in all the States and Territories. During the year the Office issued 43 documents, among which were included the ninth volume of the Experiment Station Record, 12 bulletins, and 7 Farmers' Bulletins. The review of the literature of agricultural science in the Experiment Station Record has been made more complete than heretofore, and embraces all the countries in which agricultural investigations are conducted. No such comprehensive survey of this field of scientific research is made elsewhere. With the aid of the Record our investigators are kept well informed regarding the progress of agricultural science throughout the world.

In accordance with my instructions, the Office has systematically engaged in the preparation of popular résumés of the work of the experiment stations for publication as Farmers' Bulletins. Several of the bulletins have been issued and are grouped together in a sub-series denominated Experiment Station Work. Each of these bulletins contains a number of short articles, summarizing the results of recent investigations in different lines, and explanations of the technical terms necessarily employed in describing the results of investigations. As stated in a prefatory note in each number, "the chief object of these publications is to disseminate throughout the country information regarding experiments at the different experiment stations, and thus to acquaint our farmers in a general way with the progress of agricultural investigation on its practical side." One of the chief reasons for establishing an Office of Experiment Stations in the Department was that it would be able to collate and disseminate the information obtained by the individual stations for the benefit of farmers throughout the country. It is believed that this new series of popular bulletins makes the work of the Office much more effective in this direction. Now that the purpose of these bulletins is being understood there is a large demand for them.

The Office has somewhat extended its work in collating and publishing information regarding the agricultural colleges, and in promoting the general interests of their work. It has also continued in charge of special agricultural investigations in Alaska and of the researches on the food and nutrition of man which the Department is conducting in cooperation with colleges and experimental stations. Investigations on irrigation, to be carried on in a similar way, have recently been intrusted to this Office.

AGRICULTURAL EDUCATION.

The past year has been marked by considerable progress in the more complete organization of courses of instruction in agriculture in our colleges and universities. The general subject of agriculture is being divided in these courses with a view to securing more efficient teaching in the several branches. Instead of having one professor of agriculture as in the past, a number of our colleges have separate

chairs of plant production, animal husbandry, and dairying. Departments of soil physics with separate laboratories are being established. The buildings, apparatus, and other facilities for agricultural education have been materially improved during the year. The improvement in the equipment and methods of instruction has resulted in bringing more and better students into the agricultural colleges.

The movement for the extension and popularization of agricultural instruction is growing in importance. The short and special courses in the colleges, the farmers' institutes, and the home-reading circles are attracting larger numbers of farmer students. The effort to introduce nature teaching, largely on subjects relating to agriculture, is being actively prosecuted in several States. The time seems ripe for the introduction of outline courses in the theory and practice of agriculture into the secondary schools in or near our rural communities in much the same way that business courses are employed in the city high schools.

There is a growing demand that this Department shall furnish our people with information regarding the progress of agricultural education at home and abroad. The necessity for the more careful study of the problems of education as related to the progress of our country in agriculture, as in the other arts and industries, is being forced home upon us by the closer relations of the United States with the rest of the world which recent events have done so much to promote. The Department of Agriculture, sustaining close relations with the workers on the farms and the educational institutions already established for their benefit, might accomplish much more toward the improvement and wide extension of agricultural education. I have therefore recommended a small increase in the appropriation for the Office of Experiment Stations to enable it to extend its work in this direction.

AGRICULTURAL INVESTIGATIONS IN ALASKA.

The first appropriation "to enable the Secretary of Agriculture to investigate and report to Congress upon the agricultural resources of Alaska, with special reference to the desirability and feasibility of the establishment of agricultural experiment stations in said Territory," became available July 1, 1897. The general supervision of the work under this appropriation was assigned to the Director of the Office of Experiment Stations. Special commissioners were appointed to visit the coast and island region of Alaska, and by the courtesy of the honorable Secretary of the Interior the superintendent of Government schools in Alaska collected information regarding the agricultural capabilities of the Yukon Valley. Collections were made of soils and of native plants, especially those used for food and forage. Data were obtained regarding the general topography, climate, and soils; natural and cultivated products and methods of cultivation; stock

raising; area of arable lands; agricultural difficulties and possibilities; desirability of experiment stations, and the locations suitable for them.

Specimens of vegetables and small fruits, in no way inferior to those grown elsewhere in the United States, were collected in different parts of Alaska, and analyses of the grasses which grew very luxuriantly in many localities in that region showed them to be fully as nutritious as those produced in the most favored agricultural regions of this country. The reports of our agents, prepared under the direction of the Director of the Office of Experiment Stations, were transmitted to Congress last December and were published as Document No. 160 of the House of Representatives, Fifty-fifth Congress, second session, and afterwards as Bulletin No. 48 of the Office of Experiment Stations.

In accordance with my recommendation, Congress continued the appropriation for work in Alaska during the current fiscal year, increasing the amount to \$10,000. Prof. C. C. Georgeson, a native of Denmark, and thoroughly familiar with the conditions of agriculture in northern Europe, who had had a long experience as professor of agriculture and an experiment-station officer in Japan and Kansas, was transferred from the Division of Agrostology to the Office of Experiment Stations and made special agent in charge of the Alaska investigations. He has made his headquarters at Sitka, in the vicinity of which place experimental plantings of seed of over 100 varieties of vegetables, grasses, and forage plants have been made.

Seeds have also been distributed to a number of different localities in Alaska, and agreements for cooperative experiments in a number of places have also been made. The building of a silo for the preservation of native grasses and the feeding of the silage to horses and cattle have been arranged for on a farm in the vicinity of Juneau. After careful examination Castle Hill, a lot in Sitka, which a number of years ago was set aside as a site for Government buildings, which were afterwards located elsewhere, has been reserved by an order of the President as a proper place on which to erect a building to serve as headquarters for the experiment station and weather service in Alaska. About 110 acres of partly cleared land have also been reserved in the immediate vicinity of Sitka for experimental purposes. A similar reservation has been made on Kadiak Island, and it is proposed to make a third reservation on the Kenai peninsula.

The botanist of the Office of Experiment Stations has continued the botanical survey of the region in the vicinity of Sitka and Cook Inlet begun last year.

The reports of the officers engaged in the Alaskan investigations during the present season have not yet been prepared, but it is expected that they will be ready for transmission to Congress early in its coming session. Enough has, however, been done to show that it is both desirable and feasible to carry on agricultural investigations

in Alaska. To accomplish results of any value it will, of course, be necessary to plan these investigations to cover a series of years, and comparatively little of practical importance can be expected from them until they have been in progress for some time. The experiments and observations made in the field should be supplemented by work in the laboratory. No provision has thus far been made for the erection of such buildings as will be needed in connection with these experimental investigations. It is also very desirable that experiments with live stock should be undertaken in the near future. The appropriation for these investigations should also be made with reference to the difficult conditions under which the work must be prosecuted. I therefore urge that the recommendation of the Director of the Office of Experiment Stations, that the appropriations for Alaska investigations for the ensuing year be the same in amount as that for experiment stations in other parts of the United States, be adopted in the appropriation bill for the next fiscal year. As it will be very desirable to enlarge our experimental operations in Alaska at the outset of the season of plant growth, commencing with the spring of 1899, I hope that the next appropriation for this work will be made immediately available.

NUTRITION INVESTIGATIONS.

The investigations upon the "nutritive value of various articles and commodities used for human food" have been pursued as hitherto, in cooperation with agricultural colleges and experiment stations and other educational institutions. In this way the Department has secured the services of experts and facilities for its work on very advantageous terms. There have been many indications that public interest in these inquiries is widespread. Special investigations with the respiration calorimeter have been made, in which not only the nutritive value of the food consumed but also its relation to the heat and energy evolved by the human body during periods of rest and work have been measured with a completeness and accuracy hitherto unknown. These investigations are not only of very high scientific importance, but have also already given promise of useful practical application. The results of the careful studies of the dietaries of people of different occupations, made in connection with the nutrition investigations, have been widely republished in this country and abroad.

It is believed that the nutrition investigations of the Department have already done much to establish a scientific basis for the courses of instruction on the food and nutrition of man, which are rapidly increasing in number and importance throughout the country. The amount of information which the Department has published in connection with these investigations has already been relatively large,

and the accumulation of unpublished data will make it possible to publish a number of bulletins on this subject during the present fiscal year.

IRRIGATION INVESTIGATIONS.

The friends of the development of irrigation as applied in agriculture in the vast region west of the Missouri River secured from Congress at its last session an appropriation of \$10,000 for the current fiscal year, to be expended under the direction of the Secretary of Agriculture "for the purpose of collecting from agricultural colleges, agricultural experiment stations, and other sources, including the employment of practical agents, valuable information and data on the subject of irrigation, and publishing the same in bulletin form."

With a view to securing economy in the general administration of this fund it was decided not to create a separate division for this work. As by the terms of the act the work was largely to be done in cooperation with the agricultural colleges and experiment stations, its general supervision was intrusted to the Director of the Office of Experiment Stations. Special effort has been made to secure the services of experts who have had not only scientific training but also practical experience in irrigation as conducted in the great West. With a view to formulating plans of work along the most useful lines, a conference of experiment station officers and irrigation engineers was held at Denver last summer under the direction of the Director of the Office of Experiment Stations. The problems of irrigation were earnestly and freely discussed at this conference and the needs of the farmer for information on irrigation subjects were carefully considered. As a result of the expert advice which the Department thus received, it has been determined to confine the work on irrigation at present to two general lines: (1) The collation and publication of information regarding the laws and institutions of the irrigated region in their relation to agriculture, and (2) the publication of available information regarding the use of irrigation waters in agriculture, as determined by actual experience of farmers and experimental investigations, and the encouragement of further investigations in this line by the experiment stations.

Arrangements have already been made for the preparation of several bulletins by competent experts, and it is hoped that during the present fiscal year considerable useful information will be published and distributed by the Department. It is obvious that the present appropriation will enable the Department to go only a little way in the accomplishment of the work which is urgently demanded by the growing agricultural interests of the irrigated region. I heartily concur with the opinion set forth in the report of the Director of the Office of Experiment Stations, that Congress should establish a settled policy regarding the work of this Department on irrigation, and that

if it is deemed wise to continue such work under my direction appropriations should be made which will enable the Department to plan irrigation investigations on a comparatively large scale and continue them through a series of years. Some of the reasons which seem to make it very desirable that investigations on irrigation should be systematically pursued by this Department are set forth in the report above referred to, and I ask that careful consideration be given to the arguments there made in support of this proposition.

It is clear that a crisis has been reached in the life of the communities in which agriculture is dependent upon irrigation for its success. The laws and institutions relating to irrigation, which have grown up in these communities, have in many ways proved so inadequate and unsatisfactory that there is a widespread feeling that radical and immediate action is demanded for their reformation. Unfortunately, the accurate information on which alone intelligent reforms can be based is almost wholly lacking. As the problems which confront these communities are, in a general way, the same, and in many particulars affect the national as well as local interests, it is highly appropriate that the National Government should undertake investigations to aid in the solution of the problems of irrigation. As many of these problems are directly connected with those in other agricultural lines in which this Department and the experiment stations are working, it is my judgment that this Department should be put in a position to efficiently organize and conduct important investigations in this line.

As already stated, the investigations of the Department may properly follow two general lines: First, a careful study should be made of the laws and institutions of the irrigated region with special reference to their improvement. The objects of this work will be (1) to aid courts and administrative officers in the adjudication of claims respecting water rights; (2) to bring out the defects in existing laws and methods of administration, and to furnish impartial and adequate information on which wiser and more equitable legislation and court decisions may be based; and, (3) to assist farmers in the acquirement of water rights and to protect their interests in the appropriation and use of water for irrigation. The other branch of work which the Department should take up is the carrying on of thorough original investigations along a number of different lines. The agricultural experiment stations in the irrigated regions have already shown the way in which such investigations should be conducted. Their means have, however, been too limited to enable them to make more than a beginning of the work in this direction.

One fundamental investigation which should be immediately undertaken relates to the correct determination of the practice of successful farmers in the use of water for irrigation with different soils and crops. At present such information is almost wholly lacking. The

collation of such information in sufficient amount to warrant the conclusions on which agricultural practices, laws, and judicial and administrative proceedings may properly be based is in itself a large task. The data thus obtained would be of great value, not only for practical purposes, but also as a guide to investigations by the experiment stations and other agencies. When once the actual amounts of water used by farmers in the irrigated regions have been determined, investigations should be undertaken to find out what is the minimum of water required by different soils and crops, in order that we may know to what extent the available water supply of the irrigated region may be utilized in the development of its agriculture. There are numerous other irrigation investigations which the Department and the experiment stations might well undertake; such are those which relate to the most economical methods for the application of water to crops, the utilization of the rainfall as affecting the need for irrigation waters, the problems of seepage and drainage, the effect of irrigation water on the growth and productivity of plants of different kinds, the prevention of the accumulation of alkali in the surface soils, and the reclamation of the alkali lands.

I believe that the importance and variety of the work demanded in the interests of irrigation in this country will justify a large increase in the appropriation for irrigation investigations by the Department. I hope that at the coming session of Congress a well-defined policy regarding the work of the Department on this subject will be definitely adopted.

DIVISION OF BOTANY.

SHEEP GRAZING IN THE FOREST RESERVES.

At the request of the Secretary of the Interior, the Botanist of the Department was directed early in July, 1897, to proceed to the Cascade Forest Reserve of Oregon to investigate and report upon the effect of sheep grazing on the forests of that region, an agricultural investigation for which his long experience in Western botanical exploration had well equipped him. The report demonstrates that the old system of unrestricted use of the forest lands as a grazing common is a public evil and is a menace to other branches of agricultural and State prosperity. A feasible way of removing this menace is conclusively pointed out, and fortunately the method proposed not only is not antagonistic to the interests of those engaged in stock grazing, but is distinctly favorable to them. The adoption of the proposed system gives every promise of contributing materially to the solidity of agricultural institutions in the West, more especially to the range-stock industry itself.

CHICORY GROWING, ETC.

In my last Annual Report attention was called to the fact that the United States imports annually at least \$8,000,000 worth of minor

agricultural products, nearly all of which could undoubtedly be grown with profit by the farmers of this country. The first of these crops taken up for investigation was chicory. Following the Department's support of the chicory-growing industry, which consisted, first, in indorsing a tariff of 1 cent per pound on imports of the crude root, and secondly, in publishing, after a careful investigation, a full report on the methods of chicory growing, the imports of chicory, which in the fiscal year 1896 amounted to 16,317,888 pounds, and in 1897 to 17,329,170 pounds, dropped in the fiscal year 1898 to the astonishing total of 315,707 (raw) pounds. Making due allowance for the heavy antetariff imports of May and June, 1897, it is clear that a very large percentage of the chicory consumed in the United States during the last fiscal year was grown by American farmers. Not only does this result appear from the import statistics just cited, but the Department has direct information of the establishment and successful operation of chicory farms in Michigan, Nebraska, and other States. In several respects methods of chicory growing as now practiced in the United States are superior to the Belgian methods in the substitution of horsepower for hand cultivation, the use of superior plows, new and much cheaper method of digging the root, and more efficient slicing and evaporating machinery.

Investigations of other miscellaneous agricultural imports of the United States are now under way.

SEED TESTING.

To the Division of Botany has been intrusted the task of testing all the seeds sent out by the Department, not only those of the regular departmental distribution, but those imported through the recently established Section of Seed and Plant Introduction and those procured in other ways for the experimental work of the various Divisions. Never before has the Department distributed seeds of higher purity and germinative capacity than during the past year. Furthermore, an elaborate series of field tests was made to ascertain whether the seeds were really of the varieties stipulated in the contract. It was found that in several cases the varieties were wholly at variance with the contract, seeds of cheaper varieties having been substituted, presumably by the subcontractors. The fact that these varieties were not true to name could not, of course, be ascertained for several months after the seeds were distributed, but a portion of the purchase money was withheld, pending the result of the field tests, and a commensurate reduction was made in the price paid for the seed. The principal beneficial result of this action is expected to lie in its warning to future contractors that they will be paid for no inferior seed, whether this inferiority is due to themselves or to their subcontractors.

The seeds purchased in Russia by Prof. N. E. Hansen, special agent of the Department, for introduction into the United States, upon

their receipt in Washington were found to contain a large amount of weed seed, in many cases of kinds not yet known in the United States. On account of the lack of seed-cleaning machinery in the districts in which the seed was purchased it was impossible to get clean seed. Every package, therefore, was carefully tested in Washington City for purity, and if found to contain weed seeds was carefully cleaned, either by machinery or by hand. Furthermore, the seeds when distributed were accompanied by a memorandum calling attention to the danger from foreign weeds and directing their extermination, should any appear.

GINSENG.

The efforts of the Department in encouraging the cultivation of ginseng have met with gratifying success. An investigation of the subject was begun in 1893 and a report issued in the following year. At that time the Department announced the cultivation of the root as feasible, but could of course give no information as to the manner in which cultivated root would be received in the Chinese market. During the past four years, however, experimentation in ginseng culture has gone steadily on. The cultivated product has been marketed, and the commercial status of cultivated American ginseng established. First-class cultivated roots, dried, have been selling during the past year at \$5.50 to \$6 per pound, slightly in advance of the best wild root. The Department, therefore, fully indorses the cultivation of American ginseng as an additional resource of the American farmer.

DIVISION OF POMOLOGY.

WORK DURING THE YEAR.

The distribution among experimenters, in different sections of the country, of trees, scions, cuttings, plants, vines, and seeds of fruit-bearing varieties and species amounted to 200 lots, including 185 varieties and 26 species.

In preparing an exhibit of fruit models for the Trans-Mississippi International Exhibition at Omaha a plan was adopted by the Division which would furnish information to observant visitors as to the appearance and varied characteristics of important fruits. The exhibit was divided into groups illustrating the principal commercial apple grown in the trans-Mississippi region, the varieties adapted to dessert and other uses in the same region, Russian and crabs, new and small varieties, and specimens of the leading commercial and dessert fruits of the United States.

A special investigation of the fruit districts of the Pacific slope was made during the year, and the results will be included in the next revision of the Fruit Catalogue, to be issued during the coming fiscal year. For this purpose, I appointed Prof. E. J. Wilson, of the

University of California, a special agent of this Division for a period of six months; also Prof. W. H. Ragan, of Greencastle, Ind., as special agent for three months. Professor Ragan is chairman of the committee on revision of Catalogue of the American Pomological Society, and the appointment was made in recognition of the cooperative work undertaken by this Division with the society in the revision of this catalogue.

Descriptions of 485 fruits were added to the files, 75 wax models were completed, and 200 water colors were made during the year.

WORK IN PROGRESS.

An investigation of the present status of the cultivation of the European grape in the Southeastern section of the United States is being made. This is being done in cooperation with the Section of Seed and Plant Introduction, for the purpose of determining the advisability of renewed efforts in the introduction and cultivation of varieties of *Vitis vinifera* on resistant stocks in that region.

Many of the promising fruit-bearing species of foreign countries referred to in last year's report will soon be introduced into this country for experimental cultivation.

DIVISION OF PUBLICATIONS.

MEDIUM FOR DIFFUSION OF INFORMATION.

The Division of Publications is the medium for the diffusion of the information acquired by the various Bureaus, Offices, and Divisions of the Department. The results of the investigations for the promotion of agriculture and the information acquired by the corps of scientists and experts are made available through various forms of publications, of which 501 were issued during the year, and the total number of printed copies amounted to 6,280,365. These publications comprised technical reports and popular bulletins, and circulars on agricultural and kindred subjects, and they were distributed as promptly as our facilities afforded to the very large proportion of our people interested in or actually engaged in farming pursuits. Notwithstanding the large number of copies of publications distributed, they were not sufficient to meet the demands; and it is evident that only by an increased appropriation will it be possible to place the results of the work of this Department in the hands of all who are justly entitled to the same.

It is extremely gratifying to know that a knowledge of the Department and its usefulness is more widely prevalent than at any time in its history. This is due in a measure to the great increase in the number of small popular pamphlets and the wide distribution of them. At the same time there has been no retrogression in the number of and technical reports which record the investigations and researches

made by our scientists and experts, and afford a permanent record of our achievements in the various realms of inquiry. These bulletins have been distributed with the greatest possible discretion. As regards all the bulletins and reports, the effort has been to place them in the hands of the persons who actually need them, and to deny the publications to all who apply for them simply to gratify a desire to obtain something because it is free.

THE YEARBOOK.

An interesting feature was added to the Yearbook for 1897, consisting of a series of 19 papers, aggregating 220 printed pages, prepared by the various chiefs of Bureaus, Offices, and Divisions, setting forth the work of each in relation to the farmer. The Yearbook also contained 18 miscellaneous papers on agricultural and kindred subjects, besides my preliminary report and the appendix of useful information, aggregating 786 pages. In this connection, I am constrained to recommend an increase in the quota of this publication allotted to the Department. For several years this allotment has consisted of only 30,000 copies, which is inadequate to supply the correspondents and others who receive no other compensation for the valuable services they render the Department, to say nothing of the demands from miscellaneous applicants, both domestic and foreign. For such purposes there should be at least 20,000 copies, making the entire quota of the Department 50,000, while Congress might order for the exclusive use of its Senators and Members such number as it sees fit, its proportion now being 470,000 copies. It is safe to say that the growing popularity of the Yearbook is due to its improved character and to the increased knowledge in regard to it.

The preparation of the volume for 1898 is already far advanced, and for 1899 I am considering the propriety of making a special effort to prepare a publication which shall contain a résumé of the achievements in the United States in every branch of science as related to agriculture during the nineteenth century for distribution at the Paris Exposition. At least 50,000 copies could be advantageously distributed, and I have no doubt Congress will vote an increased appropriation for such purpose.

FARMERS' BULLETINS.

The amount expended for printing Farmers' Bulletins during the year was \$32,756.46, the total number of copies being 2,170,000, of which 1,580,000 were distributed upon the order of Senators, Representatives, and Delegates in Congress, the quota of each being 4,000 copies. Heretofore the quota was 5,000 copies, which was reduced because of the insufficiency of the appropriation for these bulletins. Requests from Members of Congress for additional copies aggregating over 100,000 copies had to be refused, owing to this cause. The

growing demand for these bulletins warrants the recommendation that adequate funds be made available for their preparation, printing, and distribution.

THE DISTRIBUTION OF DOCUMENTS.

The distribution of the publications of the Department has proceeded in accordance with the law of January 12, 1895, occupying the time and energies of the considerable force of employees necessary to mail, including publications and circulars, more than 7,000,000 documents. A special effort has been made to prevent duplication, and this precaution has made it possible to supply many deserving persons who would otherwise have been deprived of the publications.

The documents turned over to the Superintendent of Documents have met with ready sale, outnumbering those of all the other Departments combined, the amount which he realized from such sales being \$2,089.15. The sum so realized should be made available for reprinting the publications that become exhausted, thus renewing the supply for the benefit of those who are willing to pay the nominal price affixed.

AN UNJUST RESTRICTION.

I feel constrained to again recommend the repeal or alteration of the provision of the act providing for the public printing and binding and the distribution of public documents, approved January 12, 1895, which restricts to 1,000 copies in any one year all publications exceeding in size 100 octavo pages. Not infrequently a most valuable report is necessarily larger, and the restriction referred to prevents its proper dissemination, withholding from many people, specially interested, valuable information to which they are entitled. It is earnestly hoped that Congress will speedily remove this and every other barrier, so as to allow the widest possible diffusion of the information acquired by the Department.

DIVISION OF STATISTICS.

INVESTIGATIONS OF THE YEAR.

The principal work of the Division of Statistics consists of the collection and publication of information concerning the condition, acreage, and production of the principal products of the soil, and the number, value, and condition of farm animals.

Among the subjects which have been investigated by the experts of this Division are the consumption of commercial fertilizers, the changes in the rate of charge for railway and other transportation services, the cost of raising a bale of cotton, the production of sugar in the United States, the world's production and consumption of wool, and the application of the principle of cooperation to farming or for the farmers' benefit. Reports on the two first mentioned have been published. The others are in progress.

IMPROVEMENT IN CROP REPORTING SYSTEM.

One of the most important duties devolving upon this Division is crop reporting. The Statistician has devoted special attention to the subject of improving these reports and organizing a system which shall be less cumbersome and more efficient. During the year the number of State agents has been increased from twenty to forty-one, and the relative increase in the reports received from voluntary reporters, both county and township, has been very considerable. The Statistician earnestly recommends, as a further step in securing efficient service and adding to the value of the improvements already secured, the appointment of five traveling inspectors, whose duties shall include the periodic visitation of State and county agents, and who shall visit the principal agricultural regions after seedtime and during critical periods of the growing season, and finally, after harvest, reporting the results of their observations to the Statistician. In view of the value of these reports, it is to be regretted that Congress reduced the appropriation for this Division for the current year.

IMPOSSIBILITY OF ANTICIPATING FINAL OFFICIAL FIGURES.

For many years charges have been made that certain operators on the different produce exchanges have had in their possession, several hours in advance of publication, statements relative to the crop reports alleged to have been obtained from official sources. In many cases the figures closely corresponded with the figures subsequently announced by this Department. It was evidently necessary to make such allegations impossible, and without reflecting upon anyone of the employees of the Division, changes have been made in the handling of the returns which make it practically impossible for anyone to anticipate the final official figures. The fact that since these changes were made the discrepancy between the figures claimed to have been prematurely obtained and those actually published by the Department has been marked is a matter of congratulation, and should confirm the falsity of any such allegations in the future.

INVESTIGATION OF THE CONSUMPTION OF WHEAT.

Owing to the uncertainty that prevails as to the annual per capita consumption of wheat and the difficulty of obtaining absolutely reliable information concerning the amount produced from year to year, it is proposed to so extend the work of this Division as shall enable the Department to speak with a greater degree of confidence and authority concerning the much-discussed food problem of the United States and the world at large. To this end it is proposed to establish a record of movement and supply, which will prove a valuable check upon the statistics of production and pave the way for an investigation of the consumption of wheat in certain typical

communities that would be of the highest statistical and economic value.

In connection with this work the five traveling inspectors already recommended could be employed to great advantage.

CROP-REPORTING SYSTEM FOR NEW TERRITORY.

The recent acquisition of territory brings under control of the United States islands the products of whose soils are so large and of such vital importance that adequate provision must be made for the establishment of an efficient system of crop reporting in all these islands.

DIVISION OF ACCOUNTS AND DISBURSEMENTS.

IMPROVED BUSINESS METHODS.

The regulations governing financial transactions with the Department have been thoroughly revised during the year and made to conform with new and amended laws, as well as with recent rulings of the Treasury and the Department of Justice. Thus revised, the regulations have been published and supplied to persons interested.

The Accounting Officer of the Department has performed an important service during the year by aiding in the formulation of a more satisfactory method of public advertising and settlement of accounts in that connection, by which uniformity, accuracy, and a permanent record of details have been secured and a great saving of money effected. In the consideration of such questions he acted in connection with a committee of representatives from the Executive Departments, with the Chief Clerk of the Treasury as chairman. A better form for requests for transportation for persons traveling on Government business was adopted at the same time. Another step in the direction of improvement of business methods was the assignment of a well-qualified official to the duties of law clerk.

RECEIPTS AND EXPENDITURES.

During the year there were received, audited, and paid by the Department 15,576 accounts, including supplemental accounts for 1896 and 1897, as follows: Divisional, 4,658, amounting to \$847,621.64; Bureau of Animal Industry, 3,606, amounting to \$733,901.66; Weather Bureau, 7,312, amounting to \$830,437.55; and the settlement of these accounts required the issuance of 25,593 checks.

From the appropriations for 1898 the total disbursement through the Department prior to July 1, 1898, was \$2,245,334.08. There remained at that date unpaid bills for that year aggregating \$170,000. When these shall have been paid there will be a final balance to return to the Treasury of nearly \$50,000.

The total amount paid out during the year was \$2,411,960.85, which includes supplementary payments for 1896 and 1897. The accounts for 1896 were finally closed and \$488,833.58 was covered into the Treasury as an unexpended balance.

During the year \$8,071.06 was received from sales of Government property and for services, and will go into the Treasury as part of the surplus for the year. Of this amount, \$4,220.19 is made up of receipts from the seacoast telegraph lines and \$3,464.61 is from sales of condemned property.

A perusal of the foregoing review of the operations of the Department during the past fiscal year justifies the statement that the record of the year has been one of the most satisfactory growth and development. There has been manifested in many ways a widespread interest in the work of the Department and an appreciation of the value of its investigations to the producers of this country. The demand for information from the Department has been unprecedented, and covers the greatest variety of agricultural problems. Day by day the fact is more and more fully acknowledged that the services of the Department to the producer are of the first importance, and such as can be rendered to him through no other agency.

Respectfully submitted.

JAMES WILSON,
Secretary.

WASHINGTON, D. C., *November 23, 1898.*

REPORT OF THE LIBRARIAN OF CONGRESS.

LIBRARY OF CONGRESS,
Washington, December 12, 1898.

SIR: I have the honor to submit my annual report as Librarian of Congress.

The following is a record of the receipts and disbursements for the fiscal year ending June 30, 1898:

RECEIRTS FROM COPYRIGHT.

Amount of fees earned.

1897:		
July	.....	\$3, 769. 00
August	.....	4, 296. 00
September	.....	4, 559. 50
October	.....	4, 899. 00
November	.....	4, 062. 00
December	.....	5, 262. 00
1898:		
January	.....	6, 224. 50
February	.....	4, 204. 00
March	.....	4, 865. 00
April	.....	4, 835. 50
May	.....	4, 610. 50
June	.....	4, 339. 50
Total	.....	55, 926. 50

EXPENDITURES.

Salaries, Library of Congress	.....	\$114, 744. 38
Increase of Library, purchase of books, etc	.....	9, 498. 63
Contingent expenses, Library of Congress	.....	2, 000. 00
Total	.....	126, 243. 01

LIBRARY ACCESSIONS.

The additions to the Library during the fiscal year have been made upon systematic lines. The first consideration was "the filling of the gaps," and especially in the way of periodicals and newspapers. The Library, for instance, proposes to obtain complete sets of every periodical included in Poole's Index; and while a large proportion of the Poole references is on our shelves, the additions, when completed, will bring the student within the widest range of periodical literature. And when we recall the importance now attached to the periodical, to the growth of serial works on special themes, and the tendency of the masters of modern thought to find thus the most convenient form of expression, the value of this will be appreciated. We do not overlook the importance of having, as far as possible, an author's completed works. If, for instance, we

have one of the books of Mr. Bancroft or Mr. Prescott, we should have all of them. This is somewhat difficult, as useful books become rare, and are costly because of their rarity. The catalogues are, however, carefully studied, opportunity accepted when found, and eventually we hope to possess the complete works of every writer worthy of a place in the Library, and more especially a complete collection of American authors.

The Library as a school of research is kept in mind. Thus, when feasible, the Library buys whatever illustrates Shakespeare, Dante, Goethe, and other classics, or certain branches of science. Our collections in these and other departments are comprehensive and valuable.

Special attention has been given to the political, social, and religious movements attendant upon the development of the Republic. In religion, for instance, we have the Church of the Disciples of Christ; in politics, in addition to other phenomena, we have anti-Masonry and Know-Nothingism. In a social as well as a political way we have whatever illustrates antislavery, prohibition, and woman's rights. Attention is specially given to the many changes in our legislation as regards political economy and finance. The Mormon Church is an emphatic condition, and we have sought whatever pertains to its progress. There are likewise many less important, but no less interesting, phases of faith, ambition, hallucination, and romance which blend into our history. They illustrate the rapid, perhaps inexplicable, changes of national thought—what to-day is and what to-morrow is not—and it is our effort that the Library should possess whatever illustrates their inception and growth.

Take, as an example, the Southern Confederacy—the most pronounced political movement since the French Revolution. Any publication illustrating the civil war or its causes is welcomed to the end that in a century or so, when the mind of the historian can impartially view the stupendous evolution, the Library will be the one assured field of research. We have already a very large assortment of Confederate publications in the way of documents and literature, but not so complete as could be desired. Whatever pertains to the Confederacy—its polemics, music, war songs, and domestic songs; its newspaper writings as well as broadsides; its manuscripts, official publications, and war narratives—will be preserved.

Whatever throws light upon the early history of the several States, their foundation and growth, is sought. We are rich in the history of New England and the Colonies, although it is to be regretted that gaps were not filled when it could have been done with convenience and without large expense. Taking a lesson from experience, the Library is endeavoring to complete the early chronicles of the more recent Commonwealths, those especially which came with the Mexican war and the annexation of Texas and Alaska. Already a large amount of material pertaining to the Klondike and surrounding regions has been arranged and made ready for the shelves. Much of this came to us in the form of newspaper clippings, letters, telegrams, commercial posters, and advertisements—trivial now, but sure to be invaluable in the next generation as showing the incipient stages of a new and growing Commonwealth.

In the same line of research the Library at the time of the death of Prince Bismarck and of Mr. Gladstone purchased whatever appeared in contemporary literature pertaining to their careers. In this was embodied two generations of German and English history. By taking advantage of the opportunity, the Library obtains at a moderate expense unique and priceless collections which can never be replaced. We can understand the importance of this, remembering what would be the

value of similar collections had they been made at the time when Washington, Napoleon, and Lincoln passed away.

While thus considering research in American lines of work, and filling up gaps, attention has been given to the current literature of Great Britain, and, in a lesser degree, of Germany and France. We have added to the Library nearly every useful book that has come in the current year from the English press, as well as new and annotated editions of famous works.

The Library, for obvious reasons, arising out of recent events, has given attention to Spanish publications in history, jurisprudence, and geography, and especially what concerns the Antilles and the Philippines. A bulletin containing what we have gathered upon these themes will be sent to Congress. In addition, some purchases, mainly historical and bibliographical, have been made in Germany and France. The Library would be justified in spending as much money on continental literature as upon that of Great Britain. This is the home of many races coming and still to come, who are welcomed with undiminished hospitality to our ultimate citizenship. A national library can have for them no feature of more enduring interest than that which tells them of their history, literature, and ancestry. The large immigration of Germans, their widening influence in the formation of American character, their interest in German history, literature, and genealogy—an interest sure to remain with their descendants—would be the highest reason for a very full German collection in our National Library. France, in whose language will be found the literature of all times, should have a commanding place.

The same might be said of Italy, the literature of Russia with its recent strenuous advance, that of Scandinavia as well as of the vanished and vanishing tongues which remain as fragments of dissolving civilizations. There are the realms of research in Arabia, India, China, and Japan, whose frontiers we are but approaching.

It was with this view that the Librarian, after consultation with Mr. Day, the late Secretary of State, addressed a circular letter commending the work of the Library extension to our diplomatic and consular representatives. As will be seen by the terms of the circular, which appears in the appendix, the Library asked the advice and assistance of our foreign representatives with the view of obtaining additions by purchase or exchange. Aiming at the literature of the world, it was believed that those who served the Government in every part of the world would rejoice in the strengthening of what in its highest sense is a great national institution. An American official on the spot could see the opportunity for timely purchases, and note the chance of exchange with foreign governments. Under a reciprocal and considerate policy, the Library by the mere processes of administration could be largely increased in value. The response to the circular which Mr. Secretary Day transmitted to our foreign representatives was gratifying and resulted in many valuable additions. A summary of what was thus received is embodied in the appendix.

While the Librarian is grateful for the recent increased appropriation of \$15,000, it would be wise to increase this so as to broaden the Library in every phase of progress. The department of manuscripts should be prepared to purchase some of the rare possessions always coming within reach. We should give the department of music the scores of the masters, so that with small expense and in a short time our already noble musical collection would be the largest in the world and a national

center of musical study. But while these departments, not to speak of others whose wants are dwelt on elsewhere, are earnestly commended to Congress, the paramount duty is the strengthening of the Library as a collection of books.

For while the Library enjoys an advantage as the recipient of the copyright publications, a good portion of what is thus acquired must, for the present generation at least, be of temporary value. While these copyright additions will in their day be sought by the student of manners and morals, attaining an importance impossible to anticipate, they are but a limited contribution to the immediate vital force of the Library. While given due place, the Library should be strengthened by that wise munificence of Congress to which we alone can appeal for its growth. As a national institution it is as yet in its earliest stages. The country scarcely knows of its existence nor of the treasures already in its keeping. While other national libraries, notably those of England and France, are enriched by gifts from private sources, the tendency of the American is to send his gifts, where they take the form of books, to the library of his college, State, or town. If the American felt the same interest in his national library as the Englishman in the British Museum, in a few years we should have one of the three great libraries of the world. The fact that we depend almost alone upon the accretions of the Copyright Department and the modest appropriations of Congress narrows our scope and limits our usefulness.

Moreover, in thus commending the Library to the special grace of Congress, it should be kept in mind that money thus set aside in the endowment of an institution worthy of the Republic—looking toward its place with the national libraries of England and France—is an asset, not an expense. Every dollar given toward its development, in whatever form—of law, music, manuscripts, the graphic arts, as well as general literature—adds to its mere money value. The British Museum—representing as it does the investment of large sums—is to-day as a mere asset of national property worth to the treasury far more than it cost. The same may be said of the Library of Congress.

Last year it was impossible to give anything but an estimate of the contents of the Library. A careful count has been made up to September 30, 1898, with the following result:

ENUMERATION OF THE LIBRARY.		Vols.
General history		2, 477
History, biography, and description of all countries except America and Great Britain		15, 406
General foreign biography		2, 046
Individual foreign biography		4, 665
Genealogy, heraldry, costume, etc.		898
Great Britain		5, 190
General British biography		832
Individual British biography		4, 502
British genealogy		364
America		20, 058
General American biography		899
Individual American biography		3, 639
American genealogy		1, 348
Mathematics		4, 710
Geology		2, 712
Physics		2, 267
Astronomy		3, 071
Chemistry		1, 361

Enumeration of the Library—Continued.

	Vols.
Medicine	10, 025
General natural history	1, 877
Zoology	4, 688
Botany	2, 413
Agriculture	3, 417
Useful arts	12, 491
Church history	5, 690
Theology	24, 258
Law library	101, 868
Law books in general library	1, 156
International law	2, 737
State papers	374
Colonies	767
Statistics	4, 990
Economics	967
Elections	404
Finance	2, 697
Science of government	2, 063
Legislative proceedings, public documents, etc.	53, 475
Directories, yearbooks, and almanacs	13, 729
Political science	3, 170
Philosophy and education	7, 260
Sociology	6, 213
Mythology and superstitions	1, 604
Geography	5, 331
Architecture	1, 537
Fine arts	4, 391
Music	11, 192
Poetry	18, 230
Drama	3, 469
Fiction	34, 102
Letters and conversations	1, 445
Rhetoric	3, 823
Literature	8, 036
Language	5, 980
Collected works	14, 103
Essays	4, 478
Ana, wit and humor and quotations	1, 849
Smithsonian collection of publications of learned societies	47, 573
Periodicals	30, 862
Newspapers	17, 649
Miscellaneous collections:	
Reference books in the reading room and departments	7, 439
Thomas Jefferson's library (estimated)	2, 000
Rare books in office and on exhibition	3, 725
Toner collection	21, 662
Washington collection	836
Shakespeare collection	1, 297
Homer collection	284
Virgil collection	223
Dante collection	137
Goethe collection	174
Burns collection	186
Chinese books	2, 882
Turkish books	437
Books in raised print for the blind	219
Books at the bindery and in mail room	10, 690
Books loaned out	1, 664
Duplicates taken from the shelves	9, 999
Uncatalogued books in catalogue department	17, 793
Duplicate and uncatalogued books	64, 647
Total	705, 122
Copyright deposits (duplicates)	126, 985
Grand total	832, 107

Enumeration of the Library—Continued.

PAMPHLETS.

	Vols.
Catalogued and on shelves	50,360
Uncatalogued and duplicates	176,612
Total	226,972

Growth of Library and deposits, fiscal year 1898.

	Copy-right.	Pur-chase.	Ex-change.	Gift.	Total.	Depart-ment total.
Library: Volumes	12,224	7,064	1,048	5,136	25,472	25,472
Periodical department: New journals	12	105	.....	403	520	2,646
New periodicals	764	148	26	656	1,594	
Old periodicals .....	.....	532	.....	.....	532	
Hall of maps and charts: Maps, etc	1,388	.....	.....	.....	1,388	1,388
Art department: Prints	4,965	1	.....	23	4,989	5,024
Books	35	.....	.....	.....	35	
Manuscript department: Volumes .....	.....	5	.....	.....	5	47
Manuscripts .....	.....	39	.....	3	42	
Law library: Volumes	310	246	.....	.....	556	556
Music department: Volumes and pieces of music	10,767	59	.....	22	10,848	10,848
Totals	30,465	8,199	1,074	6,243	45,981	45,981

To the increase of the number of books in the Library proper (25,472) should be added 5,832 volumes deposited in the Library by the Smithsonian Institution and placed with the Smithsonian deposit. This makes the actual growth of the Library in books for the fiscal year, from all sources, 31,304 volumes.

In the report for the year ending November 30, 1897, the Library was estimated at 787,715 volumes and 218,340 pamphlets. The duplicates were estimated at from 30 to 40 per cent, a proportion still maintained. What was known as an estimate last year may be accepted now as the result of a careful count.

We have been unable to give an exact statement of what is known as the Smithsonian collection. This can only be done when the uncatalogued books are classified. The following table gives the number of books and pamphlets supposed to embrace the Smithsonian deposits:

Publications of learned societies and duplicates in east stack and at the National Museum	47,573
In the chapters of the Library	23,528
In law library in the Capitol	1,884
In catalogue room	218
Uncatalogued books in catalogue department	2,655
At bindery and in mail room	1,985
Total	77,843
Pieces of music in music department	2,730
Inaugural dissertations and pamphlets	18,599
Grand total	99,172

From the beginning of October, 1897, when the removal of the books from the Capitol was completed, till November 1, the assistants were engaged in placing the books in order on the shelves. During this period, while the reading room was not open to the public, books were freely supplied to such students as came, and all requests from Senators and others entitled to the use of the Library were granted.

The new Library building was opened to the public November 1, 1897, and has remained so every day with the exception of Sundays and legal holidays. The reading hours have been from 9 a. m. to 4 p. m., except on a few Saturdays in July and August, when the Library was closed at noon. Since October 1 the hours have been extended to 10 in the evening. While Congress was in session the Library was kept open for its use until adjournment.

During these months many improvements have been made having in view the efficiency of the service. Carpets have been laid, telephone communications opened with the other departments of the Library, the Capitol, and the city, and by long-distance wires with other cities. With the exception of a slight noise from the book-carriers, experiments for the reduction of which are in progress, silence has been maintained. The numbering of the desks and the rule of delivering books to readers at their desks conduce to order.

A daily record has been kept of the readers, as well as the number of books and magazines supplied. It will be interesting to note from the following table how Library attendance varies with the seasons. In January, February, March, and April the readers were the most numerous, the highest number one day (April 6) being 432; the smallest (on September 9, a half holiday), 41. The daily average was 155.

Number of readers.

1897:		
	November	5, 866
	December	6, 513
1898:		
	January.....	7, 427
	February	6, 217
	March.....	7, 097
	April.....	6, 186
	May.....	6, 014
	June.....	5, 904
	July.....	4, 367
	August	3, 771
	September	4, 131
	Total	63, 493

Number of books supplied in reading room, 1898.

1898:		
	January.....	11, 644
	February	11, 620
	March.....	15, 270
	April.....	15, 768
	May.....	10, 738
	June.....	10, 057
	July.....	7, 681
	August	10, 517
	September	10, 416
	Total	103, 711

A daily record has also been kept of the number of books loaned out. A careful system of double entry is maintained, so that it is possible to tell what books are charged to any person, and also to whom a given book is charged.

Books taken from the Library, 1898.

January	2, 426
February	2, 372
March	2, 492
April	2, 276
May	1, 946
June	1, 966
July	639
August	662
September	730
<hr/>	
Total	15, 509

Since the opening of the branch office in the Capitol and the use of the railway and tunnel, the demand for books has daily increased. During the whole of the eight months in which this transit system has been in use, there has been no delay in the service and no damage to the books.

The Librarian is glad to note that the Library is becoming, as it were, a bureau of information, consulted by people from all sections. Twenty years ago, and as a rule, the Library was sought for a specific book; to-day applicants ask advice as to reading, or request special information. It is the policy of the Library to encourage this spirit of inquiry. This often requires time and pains, but experience shows that answers can readily be found. No question is put aside until every channel of information is exhausted. Visitors to the Library in search of some one work on a special theme of interest are encouraged to consult others of the same character, and of which they, perhaps, had no knowledge. Inquiries by mail are mainly requests for extracts from rare books or old newspapers, the history of cases before foreign tribunals, suggestions as to reading, help in research, and about genealogy and family history.

When it is found that a book called for by a reader is not in the Library, the title is taken at the desk and the volume ordered if deemed desirable. Cards requesting readers to furnish the Librarian with the names of books desired are distributed from the desk.

Our books in the Chinese language, mainly derived by purchase from the library of the late Caleb Cushing, the first American envoy to China, have, through the courtesy of His Excellency Wu Ting-fang, the present Chinese ambassador to Washington, been catalogued by some of the learned gentlemen connected with the embassy. For the kindness of His Excellency, the Librarian makes public and grateful acknowledgment. A catalogue of this unique collection appears in the appendix.

While the daily service of the Library is continued, the work of classification and arrangement goes on. The larger part of the Library has so far advanced that no further arrangement will be needed until the consummation of the reclassification. Duplicates are eliminated for the purpose of exchange. Uncatalogued books, law books, periodicals, maps, and music, which came in chaos from the Capitol, have been assorted, and thousands of volumes thus received given place on the shelves.

LIBRARY BULLETINS.

The following bulletins have been issued by the Library during the year:

Griffin, A. P. C., and Phillips, P. Lee: List of books relating to Cuba (including references to collected works and periodicals), with bibliography of maps. February 25, 1898. Washington, Government Printing Office, 1898.

Griffin, A. P. C.: List of books relating to Hawaii (including references to collected works and periodicals). Washington, 1898.

Phillips, P. Lee: Alaska and the northwest part of North America, 1588-1898. Maps in the Library of Congress, Washington, 1898.

Solberg, Thorvald: The copyright law of the United States of America in force January, 1898. Washington, 1898 (office of the register of copyrights, Bulletin No. 1).

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BIBLIOGRAPHY.

It has been hoped that the reorganization of the Library and its classification would be so far advanced as to justify the issue of monthly bulletins. This hope, it is trusted, will soon be realized. In anticipation of this, several bulletins have already been printed. As will be seen, their publication was governed by the condition of public opinion and in the belief that Congress might value the information thus presented. The debates on Cuba, the overture to the recent war, justified the bulletin on Cuba. The Hawaiian annexation required our bibliography of Hawaiian history and literature. The commercial and mining interests in the Northwest invited our bulletin of maps appertaining to that region from 1588 to 1898. The Philippines question was met with a bulletin on the Philippines. This was prepared for the use of the State Department and our Peace Commissioners at Paris. The condensation of the laws on copyright and copyright law was compiled in obedience to a general demand and transmitted in the form of a bulletin. The same may be said of the literature on the interoceanic canal question. The widespread interest in these publications is shown in the daily requests for copies from our own as well as foreign countries. While looking forward to the periodical issue of bulletins embodying the bibliographical features of the Library, it has been our aim to anticipate the wants of Congress upon subjects of legislation and to hold the resources of the Library ever at the command of those for whom it was founded.

TITLE ENTRIES OF WORKS COPYRIGHTED.

By the amendment of the copyright law of 1891 Congress made it the duty of the Librarian of Congress to prepare a weekly catalogue of all books and other articles for which copyright had been granted. This publication was designed, primarily, to serve the collectors of customs in the prevention of the illegal importation of copyright works. To render it more useful for this purpose and give it special bibliographical value the articles catalogued have been classified, and each issue provided with a complete index of copyright proprietors. The work is edited and

arranged so as to comply strictly with the law, which requires that it should contain a complete transcript of the title entry, and that each title should state the name of the copyright proprietor, the date and number of the copyright entry, and the date of the receipt of the copies deposited to complete the copyright.

This publication is of special importance as the official, contemporaneous record of the growth of American literature and American art. Its value in this particular is not only current, but permanent; as a historical record of the first production of the books and other articles recorded, its usefulness to the student will increase with time. Every effort has been made to improve it as a chronicle of current literature. The titles are prepared with completeness and arranged for ready reference. Care is taken also to number each title so that statistics can be obtained of the annual intellectual and artistic progress of the nation. Some idea of the volume of this productiveness is conveyed by the mere statement that this Catalogue of Title Entries for a single year requires four octavo volumes of 1,000 pages each.

FOREIGN COPYRIGHT ENTRIES.

By the act of March 3, 1891, amending the copyright law, the privilege of copyright protection in the United States was extended to the citizens of such foreign countries as granted copyright to Americans upon equal terms with their own citizens.

This enactment, which was the result of an awakened sense of the justice due to foreign authors and artists, has not only secured commendation from right-minded people the world over, but it has proved a source of revenue to the Government as well as advantage to the Library. During the last fiscal year the entries of titles of works by foreign authors amounted to something over one-tenth of the total number of entries for the year, there being 7,731 foreign entries to 67,814 by citizens of the United States, out of a total of 75,545. A comparison of fees received during the same period makes an even more favorable showing for the foreign entries, owing to the fact that a double fee is charged. The total amount of copyright fees earned and paid into the Treasury for the fiscal year 1897-98 reached \$55,926.50, of which amount \$45,711 were fees for American books and other articles, while \$8,842 were earned by recording the titles of foreign products. This sum represents more than one-fifth of the entire amount of the annual cost of running the copyright office.

The operation of the act of March 3, 1891, not only results in thus adding to the Treasury reserve, but it is also a source of distinct gain to the Library, owing to the statutory requirement that two copies of each book or other article copyrighted shall be deposited in the Library in order to complete the copyright. Thus the 7,731 foreign entries made in the copyright office during the last fiscal year have resulted in a large and valuable accession to the Library of books and engravings, as well as maps, music, and other articles. As the law requires the American manufacture of all books copyrighted, only such foreign works as are of sufficient importance, or popularity, to justify the expense of the double production thus rendered obligatory are reproduced and copyrighted, the result being that these foreign books form an exceptional body of literature. Thus the Library has obtained, gratis, handsome editions of the works of Kipling, Stevenson, George Meredith, Balzac, Bulwer-Lytton, etc.; éditions de luxe of Tennyson and Voltaire; the important biographical edition of

Thackeray's complete works; books by Carlyle and Morley; editions of the classics, and valuable works in the domains of science, medicine, and the law.

The Library has striven likewise to answer the quickening sense of interest in the literature of American history and genealogy. We have been gratified with the widespread desire to assist the Library. It would be a transgression of the reasonable bounds of this report to enumerate the offices of kindness and courtesy extended to the Library. In addition to the many acquisitions through our correspondence with historical societies, special mention is due to the New York Genealogical and Biographical Society, the New-England Historic Genealogical Society, the Rhode Island Historical Society, the Pennsylvania-German Society, the Virginia Historical Society, the publishers of the William and Mary College Quarterly, the Washington and Lee University papers, the Columbia College studies in literature, and works of the same character.

There has been opened during the year an exhibit of rare and early-printed books, filling an entire gallery, and showing in glass cases early and curious Americana and examples of incunabula, representing every year from A. D. 1467 to 1501.

While the Library, during its business of classification, is constantly uncovering treasures whose very existence was unknown or vaguely remembered, we have had to realize that in many respects the Library was an aggregation of "imperfect sets." Our bound collection of Parliamentary Sessional papers stops with 1888. After painstaking effort we are still unable to complete the publications of our own Government. This statement is made not without regret, but with the belief that Congress will give us a remedy, so far as the future is concerned, by appropriate legislation. This may be illustrated by an allusion to the monographs in the naval as well as the military departments of the Government. These are not singular illustrations, but typical of the general condition of our departmental publications. We can only hope, by the aid of Congress and constant watchfulness, to make this complete in time. To give the Library its just position and enable the country to realize its full value, Congress should make it the depository of the literature—official, personal, and otherwise—of the nation; should direct that two or more copies of every work issued under Government authority should be sent to the Library; that it should contain whatever concerns the foundation and growth of the Republic.

THE GARDINER GREENE HUBBARD COLLECTION.

On March 21 the Library was offered by Mrs. Gertrude M. Hubbard the valuable collection of prints gathered as the result of a lifetime of scholarship and study by her late husband, Gardiner Greene Hubbard. The value and extent of the benefaction will be explained in the Appendix.

OTHER GIFTS.

Through the generosity of the children (Eleanora Digges Speer, Anna Morgan Mosher, Ada Morgan Hill, James Dudley Morgan, and Cecil Morgan) of the late Nora Digges Morgan, of this city, daughter of William Digges, of Maryland, a considerable number of historical manuscripts will be given to the Library of Congress. The papers thus presented concern the foundation of the seat of government at Washington, while a few illustrate the Revolutionary period.

The Librarian desires to acknowledge the receipt, from Mrs. Horatio King, widow of the distinguished gentleman who served as Postmaster-General in the Cabinet of President Buchanan, of a large and representative collection of volumes belonging to his library. These were gathered by Mr. King during his public life, and will be of special value as illustrating American political history, especially of the period immediately preceding the civil war.

The Library is indebted to Prof. Thomas Wilson, of the United States Museum, for eleven very valuable and interesting Flemish manuscripts, written on vellum and ranging from the middle of the fourteenth to the end of the seventeenth centuries.

THE LIBRARY OF JEFFERSON.

The foundation of the present Library was the purchase by Congress from Thomas Jefferson of his private library in 1815. The circumstances attending this transaction have been compiled and are printed in a condensed form in an appendix. The number of books belonging to Mr. Jefferson was 6,487, and the price paid \$23,950. At the time of the purchase it was deemed to be the largest and most important private collection in the United States.

As our Library grew the volumes which thus came with the Jefferson purchase were divided into the various chapters. With the enormous Library increase of the past generation they have, as it were, been entombed and forgotten. Remembering that this private library was the foundation of the Library of Congress, that it was directly associated with a revered patriot, the volumes composing it have been brought together and assigned to a special room, to be known as "The Jefferson Library." While this in no way removes the books of Mr. Jefferson from their library offices, they will, it is hoped, ever remain not only as an object of public interest, but as a memento of an illustrious statesman whose words and deeds have been interwoven into our history. What, in a measure, will prevent the complete realization of this purpose was a loss of part of Mr. Jefferson's collection in the fire of 1851. Enough volumes remain, however, to enable us to perfect the tribute it is proposed to pay to an immortal name.

THE COPYRIGHT DEPARTMENT.

The articles deposited in compliance with the copyright law are as follows—the enumeration being from July 1, 1897, to September 30, 1898:

July, 1897, to September, 1898.

1. Books:	
(a) Books proper (volumes).....	6, 986
(b) Miscellaneous articles entered under the term "book," as used in the copyright law, e. g., circulars, leaflets, etc.....	6, 001
(c) Newspapers and magazine articles.....	4, 279
2. Dramatic compositions.....	464
3. Periodicals (numbers)	16, 400
4. Musical compositions.....	20, 687
5. Maps	1, 640
6. Engravings, prints, etc	4, 136

July, 1897, to September, 1898—Continued.

7. Chromos and lithographs	1,077
8. Photographs	8,492
9. Miscellaneous (unclassified articles)	376
Total	<u>70,538</u>

Of each of the above, two copies were deposited, making a total number of articles	141,076
Photographs deposited with titles for works of art	<u>1,172</u>

Grand total to September, 1898..... 142,248

The business for the fifteen months from July 3, 1897, may be briefly summarized as follows:

1. There have been 98,391 entries of copyright.
2. There have been collected and paid into the Treasury \$64,455 as fees for copyright business.
3. Letters to the number of 36,376 containing remittances have been received.
4. We have received 21,528 orders for the payment of money, which was paid into the Treasury. This included 14,521 money orders, 1,352 drafts, and 938 express orders for money.

There have been drawn 2,075 checks, which were mailed to persons to whom excess fees or unused fees were to be returned, and for each check thus drawn an index card has been made, giving a concise statement of the transaction requiring the refund.

Previous to October 21, 1897, no record was kept, but from that date to September 30, 1898, inclusive, 58,452 letters and postal cards have been received. Deducting the 29,931 letters containing money remittances, there remain 28,521 miscellaneous letters and postal cards, mainly letters of inquiry.

From November 5, 1897, the practice was begun of making an index card for each important letter, giving such letters a consecutive number and putting on the card the name and address of sender, date of writing and receipt, with a brief of the contents of the letter. Up to September 30, 1898, 21,526 of these invaluable index cards have been made, and a corresponding number of letters have been read, answered, and filed.

No exact record of the mail dispatched from the copyright office was kept prior to March 1, 1898; but from March 1 to September 30 of this year (seven months, only) the total number of articles, letters, certificates, postal cards, parcels, etc., sent out reaches the grand total of 56,636, or more than 8,000 per month.

From July 27, 1897, to September 30, 1898, 36,726 receipts for moneys received have been mailed.

Thirty-two thousand eight hundred and ninety copyright certificates have been mailed up to September 30, 1898.

Copyright entries to the number of 55,625 have been recorded and revised.

One thousand four hundred and twenty-seven assignments of copyright have been certified.

One hundred and forty-two thousand two hundred and forty-eight articles—books, maps, music, engravings, photographs, etc.—have been received as copyright deposits from July 1, 1897, to September 30, 1898, and were properly stamped, numbered to correspond with the number of date and entry, credited, and disposed of.

Seventy thousand six hundred and twenty-four articles, duplicate copies, have been transferred to the other departments of the Library.

In addition, 800 first copies of books have been transferred to the reading room by order of the Librarian.

The weekly catalogue of title entries provided by law has included, from July 1, 1897, to September 30, 1898, 71,710 articles—books, maps, music, engravings, etc.

One hundred and forty-three thousand four hundred and twenty cards have been made to secure the printing of this catalogue, and these cards have been added to the general index to the copyright business.

Four volumes of the catalogue, averaging a thousand pages each of closely printed octavo, have been printed, and the fifth volume is two-thirds through the press.

The applications for copyright and accompanying documents number about 80,000 yearly. These require much handling in the process of passing through the office, and we have just been supplied with suitable boxes in the way of furniture. After final recording, these documents must be filed away for future use, as they are frequently needed for reference. We are now obliged to tie them up in paper parcels, which is an unsafe as well as unsatisfactory method of disposal, and, when the loss of time is taken into account, it is not economical. A sufficient number of strong pasteboard boxes should be provided out of the furniture fund for holding the accumulation of titles.

Of the 142,000 deposits, a large proportion are of such nature as maps, engravings, photographs, and miscellaneous articles, difficult to handle and keep track of because of their size and form. Some special furniture should be devised and provided to aid us in the task of managing this material, not only with celerity and accuracy, but so that the articles shall not be injured. This last consideration is of importance, as these articles will become assets of direct value.

The publishers, as a rule, show every reasonable desire to comply exactly with the requirements of the copyright law in the matter of depositing duplicate copies. The importance of fulfilling the statutory stipulations is realized, and especially that it would be a questionable economy to risk throwing doubt upon the validity of the copyright entry for the sake of saving the cost of the two copies.

Moreover, a commendable liberality is shown in regard to the Library of Congress. When extra copies have been sent to the copyright department through inadvertence, their return is rarely requested. In other cases, where a single volume of a set of books has been copyrighted, in which event a strict compliance with the law would only require the deposit of two copies of the exact volumes copyrighted, two complete copies have been deposited.

It should always be borne in mind, when considering the apparent discrepancy between the entries in any one year and the actual deposits, first, that a certain number of entries are accidental duplications, in which cases only one of the entries is required to be completed by the deposit of copies; second, that a great many entries are made of titles of projected works, many of which are never written, and many others only after the lapse of considerable time—months, or even years—in which cases usually new entries are made and completed by deposits, leaving the original entries apparently incomplete. It is agreeable to bear testimony to the prompt desire expressed to make the required deposits when a failure to do so has been pointed out, even in cases of entries made twenty or more

years ago, and any failure to comply with the law is due to inadvertence or ignorance.

THE CATALOGUE DEPARTMENT.

The question of a catalogue—so vital to the Library's usefulness—has been kept somewhat in abeyance, because of the necessity of arranging the copyright department for the convenience of authors and publishers, and the reading room for the use of the public. We have been in arrears in subject cataloguing since 1870, when the copyright department became a part of our Library system and was given the right of way. A great deal has been done for the practical work of the reading room. Much, however, remains to be done to bring the resources of the Library before the public.

The classification is based upon the Baconian system. Bacon began with the philosophical proposition that learning comes from memory, imagination, and reason—history, which comes from memory; poetry, imagination; and philosophy, the fruit of reason. From these are deduced three divisions—as amended by Jefferson under the heads of history, philosophy, and fine arts, which subdivided into 40 chapters. Under "fine arts" were embraced poetry, fiction, logic, rhetoric, and language. These 40 chapters of Mr. Jefferson were, in the processes of Library administration, increased to 44—the minor changes, as noted in a former report, being that "ecclesiastical history was changed to a division next to theology; agriculture superseded mineralogy, which was merged into geology; chemistry took the place of surgery, which was united with medicine; while the chapter on astronomy was relegated to the place of chemistry, next to physics, its place being filled by mythology; and mathematics, transferred to allied sciences, gave place to mental and moral science. The four chapters added were: 41, essays; 42, ana, wit, humor, and quotations; 43, Smithsonian collection of publications of learned societies; 44, periodicals." As at present arranged, the chapters subdivide as follows:

- | | |
|---|--|
| 1. General history. | 25. Statistics, political economy, finance, politics, etc. |
| 2. History, biography, and description of all countries except America and Great Britain. | 26. Philosophy, ethics, education, etc. |
| 2½. Genealogy, heraldry, costume, etc. | 27. Sociology. |
| 3. Great Britain. | 28. Mythology, superstitions, etc. |
| 4. America. | 29. Geography. |
| 5. Mathematics. | 30. Architecture. |
| 6. Geology. | 31. Fine arts. |
| 7. Physics. | 32. Music. |
| 8. Astronomy. | 33. Poetry. |
| 9. Chemistry. | 34. Drama. |
| 10. Medicine. | 35. Fiction. |
| 11. General natural history. | 36. Letters and dialogues. |
| 12. Zoology. | 37. Rhetoric. |
| 13. Botany. | 38. Literature and bibliography. |
| 14. Agriculture. | 39. Language. |
| 15. Useful arts. | 40. Collected works. |
| 16. Ecclesiastical history. | 41. Essays. |
| 17. Theology. | 42. Ana, wit and humor, quotations, etc. |
| 18–23. Law. | 43. Smithsonian collection of publications of learned societies. |
| 24. International law. | 44. Periodicals and newspapers. |

The work of the catalogue department is thus divided :

1. Ordering and receiving of books.
2. Accession catalogue and serial record.
3. Stamping and labeling of new and relabeling of old books.
4. Cataloguing and classification, including the revision, proof reading, and arranging of catalogue and shelf-list cards.
5. Preparing for the bindery all books and pamphlets to be bound or repaired, except periodicals.
6. Mounting and alphabetizing of various printed entries, especially the British Museum accessions; arrangement of scraps, clippings, etc.

The present staff is about able to handle the accessions. But, besides keeping up the old official catalogue and classification, we must so advance the new dictionary card catalogue as to make it accessible to the public, and push as rapidly as possible the work of reclassification. It is of great importance that the reclassification be advanced as steadily as may be consistent with good work. The preparation of a dictionary catalogue, judging by the experience of other libraries, will necessarily be a slow undertaking, requiring expert trained service. From 2,000 to 3,000 volumes a year can be completed by one cataloguer steadily at work.

To cover only the copyright books, then, at their present rate of increase, constituting about one-fourth of the annual accessions, would take the time of two or three experts, without considering the work of revision.

As soon as the Government Printing Office delivers the cards now in course of preparation we can place before the public the author-catalogue of all copyright books published after July 15, 1898, title cards, biographical and bibliographical subject entries to be added for the same; also, author and (partly) subject cards for articles in certain important periodicals and serials. This will be the beginning of the new catalogue system.

To complete a full dictionary catalogue there should be one cataloguer for every 2,000 or 3,000 books received annually. This work will advance as rapidly as the strength of the force allowed by Congress will permit.

The need of a binding and printing office in connection with the Library is even more apparent than last year. The experiences of the largest libraries show that it is absolutely necessary, for the proper administration of the Library, to have in the same building a well-equipped printing office and bindery.

We are at present forced to adopt expedients in the binding which occasion delay, besides adding to the labor of administration, not to speak of the risk incurred by sending the books to be bound outside.

By cooperation between the copyright and catalogue departments we have arranged for printing 50 copies of each entry for copyright books. This will give the number of cards required for the proper cataloguing of copyright books. Copyright accessions at their present rate of increase constitute about one-fourth of our gains. How, then, to secure printed entries for the remainder of the accessions and for the bulk of the Library already catalogued is one of the important questions. Reasoning from experience, the solution would be found in the addition of a printing office to the Library. In 1895 my predecessor urged the necessity of a bindery in the following terms. This bindery, it was held, had been—

long needed as an adjunct to the Library to avoid the risks of wear and tear, or possible loss by fire, in sending out its treasures for binding. Such bindery may be readily equipped by detail from the Government bindery, as already done in some of the Departments. The great injury to bindings in the existing Library, especially

to the larger and heavier volumes (often costly and illustrative maps), from the compulsory crowding and absence of shelf supports, will entail a heavy amount of repairs. The absolute need of ample room for arrangement, in order to preserve this great and precious collection unimpaired, has been taught by the bitter experience of so many years in the old Library.

The additions to the Library during the year ending September 30, 1898, have been catalogued and classified according to the old system. The exceptions to this are of copyright accessions; those included in Division I; books proper in the weekly catalogue of title entries.

All books deposited for copyright must be catalogued for the Library of Congress. Other libraries can be assisted materially if sets of printed catalogue cards can be furnished at moderate price. To facilitate the use of the cards printed for our own service the entries are made bibliographically as accurate as possible and in style conforming to the practice of the principal libraries.

The work of reclassification began with chapter 38, containing works on writing, printing, bibliography, and library science, and is now complete. All new books falling into these divisions are classified according to the new system.

Beginning with May 14, 1898, the catalogue department undertook, as stated above, to prepare the entries for books proper in the catalogue of title entries. This made it possible to cut up and mount on cards copies of the weekly catalogue, giving a second copy of the official catalogue for copyright books after that date. The additions to the catalogue force during the last year have made it possible to have a second typewritten copy made also of the cards written for other accessions than those coming through copyright.

Accordingly, there are now two official catalogues, complete from July 15, 1898, the main official catalogue in the reading room and the official catalogue of the catalogue department.

In the statistical summary under the heading "Binding" the number 3,776 volumes means bound volumes. The number of actual books is much greater, as wherever advisable several volumes are bound in one.

According to our system of binding records three entries were written for each volume. First, a general entry for the file; second, a slip to go with the volume indicating all details of lettering and binding, and third, a typewritten copy of the first, to be approved by the Librarian and accompany the requisition to the Government Printing Office.

The small appropriation for binding and printing made it necessary to adopt the expedient of using manila envelopes for the perservation of pamphlets, which has cost considerable time and labor.

The volume of work done in the catalogue department will be understood by this summary from October 1, 1897, to September 30, 1898:

Volumes catalogued (author titles).....	23, 070
Pamphlets catalogued	2, 878
Parts of volumes catalogued and entered on serial record	2, 535
New cards written.....	30, 396
Old cards added to or changed	8, 913
Entries for copyright bulletin since May 14, 1898.....	3, 123
Duplicates compared and decided	9, 480
Cards copied (typewritten) for official catalogue in the catalogue room	9, 940

ACCESSIONED.

January 3-September 30, 1898.....	14, 524
Number of gifts.....	2, 570
Parts entered on serial record.....	2

RECLASSIFICATION.

Volumes and pamphlets reclassified	7, 896
Shelf-list cards written	4, 745
Index cards written	3, 479
Call number changed on cards in official catalogue	5, 264

BINDING.

Number of books sent to the bindery	3, 776
Number returned from the bindery	1, 591
Number still remaining at the bindery	2, 185

Books received, stamped, and labeled, but not catalogued, 325 volumes and 355 parts.

According to the acting librarian of the Smithsonian Institution, 1,962 volumes, 3,780 pamphlets, and 18,312 parts of periodicals have been sent to the Library during the year ending June 30, 1898.

Number of pamphlets and unbound volumes inserted in manila envelopes and placed on the shelves, 1,975.

The following is a summary of the number of book-plates, or labels, attached from February 18 to October 1, 1898. Previous to the former date no statistics had been kept.

Copyright	9, 500
Purchased books	9, 950
Presentations	1, 800
Smithsonian	1, 800

Total	23, 050
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As will be seen from this summary of the work done in the catalogue department, its progress will depend entirely upon the force allowed by Congress. All we can now do is to advance the dictionary work as rapidly as our present force will permit and keep the author-entries up to date. Something toward advancing this may be done by the transfer of assistants from the other departments as rapidly as the exigencies of the service will admit, trusting to Congress for such additional assistance as will press the gigantic work of the dictionary catalogue to a conclusion. Until this is done the Library will not have attained its full measure of usefulness.

THE GRAPHIC ARTS.

The department of graphic arts, according to the last report, comprised 54,233 prints, and was estimated as follows:

Engravings	4, 396
Etchings	2, 990
Photogravures	3, 736
Photographs	33, 256
Lithographs	5, 036
Facsimilies	1, 500
Typogravures	1, 347
Chromos	1, 220
Fashion plates	752

Total	54, 233
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The counting and recording prints as soon as received did not begin until January 1, 1898. From that date until July 1, 1898, there were received and accessioned 4,989 prints, making the total deposit July 1, 1898, 59,908.

The following shows the total number with the accessions :

	Copy-right.	Gift.	Pur-chase.	Total acces-sions.	Total prints.
Engravings	35	1		36	5,067
Etchings	73		1	74	3,394
Photogravures	154			154	4,885
Photographs	3,554	21		3,575	29,780
Lithographs	56			56	13,322
Facsimilies	88			88	954
Typogravures	714			714	1,558
Chromos	291			291	714
Miscellaneous		1		1	234
Total	4,965	23	1	4,989	59,908

The growth of the collection from July 1, 1898, to date (November 1) has been 4,679, and we now have a total of 64,587 prints. This shows a rate of accession from January 1 to November 1, ten months, of 40 a day, in comparison with 26 a day, as heretofore noted.

The increase of the art library has been small. In the fiscal year there were no books purchased, donated, or received through operation of the copyright law. The number of books in the art department on July 1, 1897, as set forth in the last report, was 833 volumes. The collection now numbers 868. The increase of 35 volumes was due to their separation from the general Library as distinctively "Art books." The increase in detail is as follows:

	Volumes July 1, 1897.	Received during fiscal year.	Volumes July 1, 1898.
Art literature	47	2	49
Decorative art	123	3	126
Illustrated classics	31	1	32
Illustrations of science and trade	73	2	75
Individual works of art	140		140
Collected works	139	5	144
National galleries	73		73
Private galleries	26		26
Public galleries	4		4
Exploration and research	102		102
Foreign art	29		29
Landscapes	39	4	43
Miscellaneous	7	18	25
Total	833	35	868

Since July 1, 1898, 10 volumes on foreign and decorative art have been received from the copyright department. A large number of art books have been rebound and the whole collection is in a good condition. These books are now delivered in the reading room. Special arrangements will be made for their study, as students often desire to have access to the books and pictures.

The department is recording all accessions, as well as many of the old pictures. It began on January 1, 1898, to keep two books of record, one an accession book in which all new prints are entered as received, the other a register in which all the old prints received previous to that date are recorded as rapidly as the pressure of the work will permit.

Every print is thoroughly described in the books of record. It is also entered by its title and class, its publisher and artists, on as many different cards alphabetically arranged, so that its history and description can be immediately furnished. Three new cases, with a capacity

of storing 7,200 prints, have been put in the art gallery. The total deposit is over 64,000.

In the attic room we have cases from the old Library with drawer and shelf capacity for storing 16,500 prints.

Each print, on its reception from the copyright department, is entered and given an accession number. It is measured, labeled, and stamped with the date of its receipt. The data as to the work is, as a rule, taken from the print itself. In many cases, however, this is missing, and a search of records in the copyright department or correspondence with its publisher is necessary. Notwithstanding these difficulties, there have been since January 1 measured, labeled, catalogued, and entered in the accessions catalogue 9,668 prints, and registered 1,985, making a record in ten months of 11,653 prints, or over one-sixth of the entire deposit, the bulk of which came from the old Capitol practically in chaos.

Since July the last two exhibitions have been finished, and the number of copies registered and catalogued have been 4,694. These, added to the 6,959 previously registered and catalogued, make the total number of prints recorded to date 11,653.

Since July last there have been exhibitions of various phases of art. These are in a sense experimental, it being our intention to exhibit our specimens in a consecutive form, giving prominence to American art. Much of this will illustrate the progress of our art from crude to finished stages.

It is hoped in time to have a catalogue of the entire collection, more especially if the accessions do not exceed the present rate of 12,000 a year. We now have on hand 64,587 prints. For these we have cases, shelves, and drawers for inadequately storing 23,700. This leaves 40,887 unprovided for, and they are coming in at the rate of 12,000 a year. This growth involves an immediate increase of facilities in the way of furniture.

MAPS AND CHARTS.

In the last report it was impossible to give more than an estimate of our maps and charts. Without including maps found in books and periodicals, it was reported that we had 25,000 sheet maps, 1,200 atlases, 700 pocket and 800 roller maps. In all, the estimate was 27,700. A careful count has been made, with the following result:

Sheet maps	47, 042
Atlases	1, 180
School atlases.....	410
Pocket maps.....	1, 563
Total.....	50, 195

This increase of 22,495 over the past year does not represent the actual receipt of new material, but rather the discovery of maps in the old Library, their rescue, mending, mounting, and their final assignment.

This collection has suffered more from the confusion incident to the crowded condition of the old Library quarters than any other department. Maps have accumulated for years, and were practically a confused mass of material. It was necessary to gather them from damp and dusty corners, to systematize and geographically arrange them, and to repair those impaired. Before entering upon the work the superintendent visited many libraries in other cities to study their methods. As a rule, those existing are found to be primitive, and as custodian of the largest collection of maps in the Union, it became necessary to devise a plan suitable to our necessities.

Under the system adopted in the Library, maps in atlases are catalogued separately, also those found in such volumes as the old London, Gentleman's, and Scots magazines, in the publications of geographical societies, and in the British Parliamentary papers. This work has already been so far advanced that our maps and atlases are available for the student. The roller map, which, because of its awkward shape, was so difficult to manage, was sliced, as it were, and transferred into sheet maps. After the transfer from the roller, the sections of each map were connected together by a strip of cotton. We received from the old Library about 1,400 of the roller maps, and up to the present time 1,126 have been put in serviceable condition.

While the roller map is reserved for purposes of exhibition, the largest part of our maps and charts is so arranged as to be readily filed. Many Revolutionary maps, as well as Colonial maps made in Colonial times, have been discovered and mounted. When this process of discovery and restoration is completed, and we have the proper furniture, the hall of maps and charts will be thrown open to the general public.

The following summary will give an idea of some of our most important possessions. We have Samuel Langdon's "Accurate maps of his Majesty's Province of New Hampshire, dated 1756;" "Cantonment of the forces of North America, 11th October, 1765," 20 by 24 inches; plan of Quebec, the capital of Canada, showing encampments of Wolfe and Montcalm, 1759, a beautiful manuscript, 28 by 30 inches; "New Mexico, by Escalante, 1778," 26 by 32 inches.

We have also "Plan général des opérations de l'armée Britannique contre les rebelles dans l'Amérique depuis l'arrivée des troupes Hessoises le 12 du mois d'aoust, 1776, jusqu' à la fin de l'année 1779"—an immense manuscript map, 84 by 58 inches, evidently made by a Hessian in the service of Great Britain, as the descriptive text is in French.

There is likewise a collection of plans, etc., in the province of New Jersey, by John Hills, assistant engraver; 20 manuscript maps relating to the Revolutionary war from 1776 to 1782; "Amérique, campagne 1782. Plans des différents camps occupés par l'armée aux ordres de Mr. le comte de Rochambeau," 44 sheets, small folio, beautifully colored. Besides these, many of the manuscript maps of the Revolutionary war, by John Montrésor, chief of engineers of the British army, supposed to be lost, are preserved. Besides these manuscripts there are valuable engraved maps. We have Romans' map of Florida, 1774, so rare that doubt of its existence had been expressed by bibliographers. A map of the Raritan River, 1683, is an early specimen of American map-making and very rare. We have Cutler's map of Ohio, Salem, 1787, which some cartographers have noted as "unknown;" Andrew Ellicott's Territory of Columbia, 21½ by 21½ inches; the first topographical survey map of the District of Columbia. Besides the above are many old maps of early American States, cities, and counties. The atlas collection also has not been neglected. We have Blaeuw, Janson, Ortelius, Sanson, Arrow-smith, Jefferys, Bellin, Kiepert, Berghaus, and many others.

The ordnance survey maps of Great Britain, comprised in 10,000 sheets, and also 10,000 to 15,000 Sanborn insurance maps, which have come through the copyright law, form an important part of our collection. An extensive collection of the admiralty charts of Great Britain are accessible and valuable. The accessions to this department from purchase and gift since February 19, 1898, amount to 3,299.

It is earnestly recommended that early maps of America should be

obtained. At present this would not imply an immoderate cost, but as time goes on such publications will increase in value, as does everything of this character pertaining to America. We do what is possible to strengthen the collection by exchanges with other libraries, and there should be relief maps in plaster of America, Europe, Asia, and Africa, with large globes displaying the latest achievements in geographical research. We should complete our list of county and city atlases, and an effort should be made to obtain, through the aid of our consuls, the latest maps of South America and Europe.

Over 200 unique and valuable maps from the Force, Faden, and Rochambeau collections, embracing the early discoveries, as well as the French and Revolutionary wars, have been catalogued and are now accessible.

An arrangement should, if possible, be made by which titles of all new books and maps received by the various government libraries should be available. These cards could be kept together and arranged alphabetically for ready reference. The purchase of duplicate volumes may also in this way be prevented. The cataloguing of our vast collection of maps and atlases is in progress, but has been necessarily slow. They had to be systematized for prompt examination by the public, and further aid will be required to advance the work. To properly describe a sheet map, an author's card and subject card are necessary; also cards for the publisher and engraver. Each map in atlases should be catalogued separately on its merits—otherwise it is lost, except to the patient seeker. Therefore subject cards can not be too exhaustive.

It is gratifying to know that the maps and charts department has been able to render essential service to the Government in many ways, and especially during the late war with Spain. While, as a rule, our collections are guarded with sedulous care, whatever we possessed was placed at the disposal of the Army and Navy. Aid was given to the Venezuelan Commission, as well as to the Joint High Commission convened to settle questions with Great Britain. We have been able to place at their service a valuable Russian map of Alaska, made in 1802, with interesting notes, while the bulletin on "Alaska and the Northwest part of North America," compiled in the Library, has been frequently consulted in the course of the arbitration.

PERIODICAL DEPARTMENT.

The number of bound volumes of newspapers and periodicals on November 1, 1898, was 48,511, an increase during the current year of 6,899.

The total number as before given was 43,362 volumes, but in that were included unbound volumes to the number of 1,750. This year unbound matter is excluded from the above total and is counted as single numbers. Of these single numbers, 50,225 are accessible.

The Library embraces 30,862 periodicals, an increase during the year of 5,812, and 17,649 newspapers, an increase of 1,087. This represents contributions from the State Department, Smithsonian Institution, Bureau of Statistics, and elsewhere. Bound volumes have been received from publishing houses and private sources. We have purchased 532 volumes, while several hundred volumes, misplaced before the transfer of the Library from the Capitol, have been recovered and arranged.

In this estimate duplicate bound volumes to the number of 2,958 peri-

odicals and 2,955 newspapers are counted, and among them 1,479 volumes of Senate files, sent to the Library for preservation.

Classification of periodicals.

	1897-98	1898-99	Duplicates.	Loose number.
History and letters	10,053	12,324	2,096	12,217
Religion	1,708	2,446	329	5,724
Science (unclassified)	755	1,691	162	3,688
Education	245	355	19	1,251
Sociology		300		662
Agriculture		272		826
Architecture		209		929
Army and Navy	304	495	38	1,330
Electricity		93		1,123
Engineering		299		1,090
Finance		893		827
Juvenile	284	392	31	1,606
Medicine		518		2,708
Mines and metals		218		876
Secret societies		109		100
Sports		383		1,865
Trade journals	5,350	447		6,563
Railroad guides				2,376
Foreign	5,851	6,460	283	4,464
Total	24,550	27,904	2,958	50,225

The total number of bound volumes of newspapers is 17,649, an increase during the year of 1,087.

Of the above, 1,476 are duplicates, and 1,370 the scrapbook files of the Senate, also in the main duplicates. About 400 more volumes are at the bindery. These duplicates are valuable for purposes of exchange.

While we have 3,913 bound volumes of foreign newspapers, we lack current files of some of the most important. This want we are striving to remedy so far as the appropriation will justify.

The enumeration by States of the Library collection of bound newspapers (journals) is as follows:

Volumes.	Volumes.
Foreign	4,137
Alabama	125
Arkansas	134
Arizona	23
California	321
Colorado	139
Connecticut	199
Delaware	133
District of Columbia	1,414
Florida	84
Georgia	290
Idaho	23
Illinois	304
Indiana	176
Indian Territory	4
Iowa	106
Kansas	78
Kentucky	213
Louisiana	279
Maine	181
Maryland	442
Massachusetts	722
Michigan	214
Minnesota	166
Mississippi	100
Missouri	307
Montana	26
Nebraska	137
Nevada	28
New Hampshire	125
New Jersey	223
New Mexico	24
New York	1,910
North Carolina	117
North Dakota	36
Ohio	395
Oklahoma	5
Oregon	92
Pennsylvania	1,073
Rhode Island	185
South Carolina	285
South Dakota	31
Tennessee	312
Texas	93
Utah	70
Vermont	97
Virginia	380
Washington	75
West Virginia	77
Wisconsin	144
Wyoming	26
Scrapbook Senate Files	1,370
Total	17,649

A record of every periodical or newspaper sent out of the department is preserved. There have been but three losses during the year.

The demand for periodicals and newspapers increases, as will be seen from this table:

July	2, 106
August	2, 991
September.....	2, 896
October.....	5, 374
Total	13, 367

The October increase of almost 100 per cent is due to the night opening, and emphasizes the wisdom of that beneficent legislation. Owing to the as yet unsupplied gaps, the above figures do not represent the number of calls. No record is kept of these, but as a rule as many requests are made in this department which can not be supplied as the number of those supplied.

Current periodicals received during the year outnumber by nearly 500 those coming up to July 1, 1898, the present total being 1,574, of which number 764 are copyrighted, 656 received through the courtesy of the publishers, 148 by subscription, 20 from the Bureau of Statistics, and 6 from the Smithsonian Institution. The copyright list shows a small increase, and about 25 magazines have been added to the subscription list.

Besides the good will of publishers, we must likewise note the gift of annual subscriptions to over 400 daily newspapers throughout the country, beginning, in most cases, with January 1 of the present year. These cover every important city in the Union and embrace all shades of political opinion. Before the creation by Congress of the periodical department the Library received only 129 newspapers, most of them by subscription. By the processes of administration, and virtually without expense, we now receive 522 newspapers worthy of preservation. This number, reasoning from what has been, will reach a thousand journals, an apparently large number, but not too great to illustrate those mutations of thought which accompany the growth of the Republic.

In binding these papers, the annual average will be three volumes to each year, which, at the present price charged by the Government Printing Office for binding (\$5 per volume), will take from the printing and binding fund of the Library over \$7,500 a year. At least \$5,000 a year more should be allowed for the preservation of periodicals, in view of the many now incomplete sets which are being completed, as the missing numbers are received from bookdealers and auction sales. Many of the older periodicals and newspapers, shabbily bound at first, need rebinding. It is, therefore, a conservative estimate to say that \$12,500 a year for binding is needed to maintain the periodicals of the Library at the present standard of efficiency. The increase in the department, both in newspapers and periodicals, was estimated a year ago at 1,500 volumes. It is clear that this estimate will be doubled. Gratifying as this is, we have only to remember that the Library of Congress receives fewer periodicals than many of the leading libraries in the United States to see what remains to be done.

Many periodicals, rich in literary and scientific work, are accessible through Boole's and other indexes. Wonder is expressed that the Library of Congress does not contain complete sets. Other libraries, realizing their value, have surpassed us, and every year makes them

more difficult to procure. While an expenditure of \$10,000 for periodicals in the next fiscal year would not place the Library in the first rank with other American libraries, it would be an advance in the right direction.

THE DEPARTMENT OF MANUSCRIPTS.

The manuscripts in this department may be thus enumerated:

Original manuscripts:

Number of volumes of manuscripts bound	608
Number of volumes of manuscripts unbound	173
Total	781
Number of packages of manuscripts	205
Total number of individual manuscripts, bound and unbound	23,032

Transcripts:

Number of volumes bound	255
Number of volumes unbound	13
Total	268
Number of packages. (Regarded as volumes, though unbound)	862
Miscellaneous transcripts	1,536
Detached autographs	54
Broadsides	166
Currency	98
Detached seals	20
Manuscripts on vellum	27
Total	365

The total number of volumes of manuscripts, bound and unbound, originals and transcripts, amounts to 1,049, and the total number of original pieces of all kinds is 23,397.

Five volumes of manuscripts have been calendared as follows:

	Cards.
Delaware State papers, 4 vols., 479 MSS	1,980
Force papers, vol. 12, 251 MSS	850

It will thus be seen that in calendaring the average is between three and four cards to each manuscript.

The following is a list of the manuscripts catalogued:

	Cards.
John Paul Jones papers, 11 vols., 801 MSS	801
Vernon-Wager papers, 12 vols., 965 MSS	965
Force papers, 11 vols., 767 MSS	767
Dolly Madison papers, 690 MSS	690
Number of volumes catalogued	35
Number of volumes calendared	5
Total	40
Number of manuscripts calendared	730
Number of manuscripts catalogued	3,233
Total	3,963
Number of cards written for calendars	2,963
Number of cards written for catalogues	3,283
Total	6,246

Between the 17th of December, 1897, and the 31st of August, 1898, the following accessions have been made to this department:

By gift.....	MSS..	3
By purchase	bound volumes..	5
By purchase.....	MSS..	39
		<hr/>
Total		47
Cost of manuscripts purchased.....		\$148

Your Librarian, in his report for 1897, alluded to the fact that the necessities of the removal and the care required in the custody of the manuscripts had made it impossible to arrange them for the public. During the current year much has been done toward creating, as it were, this most interesting and valuable department. Suitable steel furniture and a burglar-proof safe have been provided and will soon be in place. But while we have many priceless manuscripts of historical, social, and personal interest, much is required to give the Library its full degree of usefulness. Practically there has been no appropriation for manuscripts, and the elimination of the sum requested last year for their purchase was construed as a veto upon any special expense.

The fact that the manuscript department was at that time in embryo may have been the reason of the failure to grant an appropriation. This condition has passed away. The Library has been compelled to deny itself opportunities for rare and advantageous purchases; some of scientific value, going back to the thirteenth century, and including an unpublished treatise on Aristotle by Roger Bacon. We have but one manuscript of a date earlier than the sixteenth century, and few of scientific character; nor have we a specimen of the autographic work of the masters of literature. There are, however, manuscripts of special historical value, such as the correspondence of Gen. John Sullivan, of the Revolution, from 1775 to 1783; the narratives of the Council of Safety, of Lancaster, Pa.; the correspondence of Schoolcraft, rich deposits of the colonial times, the articles of capitulation between Lord Cornwallis and Washington, Indian treaties, and other interesting possessions.

This is not written in any spirit of regret or even impatience, remembering that the manuscript department has had but a few months of an integral existence. Nor has the Library at any time until now been in a position to receive manuscripts with confidence as to their safety. The danger of fire in the National Capitol, remembering the sad experience of 1851, and what came so nearly being an irreparable disaster in the early days of November, 1898, was a menace which no longer exists.

The Library building has no superior in the world for the security of precious books and manuscripts, and we may find an incentive toward an appeal to the liberality of Congress in what is done elsewhere. The National Library of France has in the past twenty-five years expended more than \$125,000 for the purchase of manuscripts. The British Museum increases its collections at the rate of 350 volumes annually, the estimated increase between 40,000 and 50,000 individual manuscripts, about twice as many as the present number in our own Library. In saying this, however, we must remember that for fifty years at least the British Museum has been deemed a treasure-house of the British nation; that all classes take pride in enriching it; that private collections gravitate into its keeping; that the British treasury is ever ready with open and instant discernment to buy whatever will add to its value as the pro-

duct of British institutions. The Library of Congress can not as yet claim any such privilege. It has not, if one may so express it, come into touch with the country. The tendency of private munificence is toward the endowment of local or private institutions. In time it will hold to the nation the same relation as the British Museum to Great Britain, and nothing will contribute to this result so much as the generous consideration of Congress.

Since August last the repairing and mounting of manuscripts has been done by assignment of skilled labor from the Government Printing Office. While this contributes to the preservation of the manuscripts, special experts in the handling of manuscripts should be employed. The question as to the quality of paper most satisfactory for repairing manuscripts is still in debate, and the superintendent of the department has given much pains to the inquiry. Wood-pulp papers must be avoided, because a sulphide is used in their manufacture which in time reacts on the ink and destroys the paper. The Library is indebted to Mr. Tassin, an expert technological chemist of the National Museum staff, for useful assistance and advice. The necessity for doing this work with care will be recognized when it is considered that 780 of the 1,049 volumes of manuscripts are in so broken a condition as to require rebinding before they can be used. In addition there are 205 packages of originals and 900 of transcripts which have never been bound at all. We are prevented by statute from sending these manuscripts out of the building, and the work must be done in the department itself.

The Library building being so constant an object of interest, an exhibition of some of our rarest specimens was opened in the northwest pavilion.

THE DEPARTMENT OF MUSIC.

The attention of Congress has been called to the musical department as a growing and useful feature of the Library.

When we came into the new building in 1897 the department of music was in its experimental stages. Its growth thus far has resulted in the foundation of what is destined to be one of the great musical libraries of the world. As a collection of American music it is unsurpassed, and with little cost it can be made as rich in the music of other nations as it is in the music of our own.

On November 1, 1898, the music department was thus enumerated:

Total number of pieces of music on hand January 1, 1898	189, 046
Received during current year	10, 848
Total	199, 894

The following table will show the accessions in 1898:

Received from the Smithsonian Institution, vocal and instrumental	446
Transferred from chapter 32 of general library	53
Copyright accessions	10, 268
By gifts	22
By purchase	59
Total	54, 233

It is estimated that we are in receipt of 44 pieces of current or new music daily. Each piece is examined and classified, entered upon an accession book which gives its history, indexed by a card system, and

alphabetically shelved. Music received since January 1, 1898, amounting to 10,848 pieces, has been cared for, as well as 32,076 pieces previously copyrighted. While, therefore, keeping pace with the music received, the old material, to the number of 9,313 pieces, has been arranged and made ready for cataloguing. The musical accumulations of other years is classified. The extent of this work may be understood when it is seen that during the year ending August 31, 28,232 catalogue cards were written, 197 volumes bound, with 400 volumes in the bindery.

It has been our effort, so far as the classification of the various departments has permitted, to strengthen the music department, obtaining either through purchase or exchange books of reference, the scores of the classical masters, together with what may illustrate the music of all nations, ancient and modern, savage as well as enlightened. Music in its best sense is a science belonging to all ages, as well as all nationalities and conditions of men, and the Library of Congress should contain its earliest as well as its latest and most complete expression.

When so much has been done by the arrangement of the music which came from the old Library, it would be a misfortune not to continue our additions to the Library until our present already invaluable collection is a complete embodiment of the history as well as of the science of music. Among our purchases are some modern classical scores, as well as an assortment of Confederate music.

Your Librarian has suggested the necessity of musical instruments in a room adjoining the musical library, so that the scores could be read. The experiment, so far as the piano is concerned, has been tried. There is a piano in a closed room where students can gain access to the musical scores and interpret rare and classical music. Litigants with copyright interests at stake can, by access to the copyright music, establish property claims. The piano does not annoy students in the reading room nor distract attention in other departments nor draw a crowd, and is never used except for necessary purposes. While we owe the use of the piano to private courtesy, its value is shown by experiment to be so apparent, that the Librarian recommends the purchase of this and perhaps one or two other musical instruments.

The accretions from copyright are the largest that come to the Library. Thus, while in the current year we have received to October 19, 1898, 4,426 printed books, the music amounted during the same period to 12,939 pieces.

It is to be observed also that a considerable portion of this music consists of pieces valuable not only as musical literature, but as a financial asset. Since the international copyright act went into operation July 1, 1891, there has been received a number of foreign editions of standard music. The actual money value of this important collection is not readily ascertainable, but it would amount to a considerable sum; and it is to be taken into account, on the other side, that the cost of running this department is exceptionally small, amounting annually to only \$3,840. Congress will easily see that the service implied in the music coming to the Library through the operation of the copyright law considerably exceeds the cost of running the department of music, and if an annual appropriation were made for its development equal to what it brings into the United States Treasury it would soon be without a rival.

THE LAW LIBRARY.

The law department of the Library of Congress, or as much of it as remains in the old Supreme Court room, may be classified as follows:

	1897.	1898.	Increase.
Text-books.....	15,605	15,966	361
Reports, including cases and digests.....	17,609	18,515	906
Session laws, including compilations and codes.....	11,103	11,784	681
Works in foreign languages.....	8,591	9,809	1,218
Trials.....	4,687	4,842	155
Periodicals.....	3,011	3,103	92
Briefs and records.....	8,650	8,920	270
Law section of the Toner collection.....	1,293	1,293	.....
Conference-room library.....	10,000	10,372	372
Total.....	80,549	84,604	4,055

There have been added to the law department during the year ending October 1, 1898, 4,055 volumes. When we include volumes in the duplicate room, 13,214, and those withdrawn from the shelves by the justices for judicial purposes, 4,050, the aggregate is 101,868 volumes.

The larger part of these additional volumes were discovered in the course of arranging the contents of the old Library. Hitherto the want of space prevented their classification. These additions, rescued as it were, and coming into the general use of the Library, have been valuable, especially in the matter of foreign laws, there being scarcely a civilized country some of whose laws have not been found and restored to the general collection. To this may be added the law books, treatises, reports, and periodicals which come through the copyright law.

The appropriation for law books is under the direction of the Chief Justice of the United States. Thus far it has been the policy in the law department, as well as our general policy, to complete sets, fill up gaps, purchase works which do not come by copyright, and improve special collections, such as international law, in which the law library is crude. We have therefore purchased such works as new editions of Chitty's Statutes, Fisher on Mortgages, Brice on Ultra Vires, Phillimore's Ecclesiastical Law, and many others, together with Calvo's and Rivier's Treatises in French on International Law.

Recent political events have made international law a theme of commanding interest. It has been our aim to seek out and gather in whatever may throw light upon the subject.

The admiralty section has been strengthened by a set of "Revue internationale du Droit maritime," and we hope soon to have complete sets of all journals like the "Revue de Droit international et de Législation comparée."

The law department is strong in reports, but session laws have been so neglected that it is difficult to arrange complete sets. Old volumes have gone into decay, and it is with difficulty that the books thus lost or destroyed can be procured. However, with watchfulness in studying the sales catalogues much has been done—especially, for instance, in securing scarce and long-needed copies of the laws of States like Rhode Island.

While some of the criticisms upon the law library in the last report have lost their force because of improved administration in the Library affairs and judicious expenditures in the way of additions, it still holds a

higher rank among law libraries as to quantity rather than quality. To repeat what has been written, "The want of constitutional conventions, legal bibliography, biography, and miscellany is met by the collections in the general Library."

It may be said that while preeminent in European continental books and of a high rank in American reports, digests, statutes, text-books, and trials, the law department is subordinate to some other libraries in session laws, English reports, and text-books.

Attention has been called to the congested condition of the law library, more especially so far as the law students are concerned. We have a room with 2,670 square feet, or about 50 feet square. This cockpit, dim-lighted and inconvenient, with its straggling tables, is expected to accommodate the justices, lawyers engaged in cases, the members of the bar in search of light, as well as law students. Washington is said to have a greater number of law students than any educational center outside of Ann Arbor, and hence the difficulty of their accommodation. The ventilation is imperfect, with no space for improvement. Artificial light is of little avail and the discomforts have grown with the increase of business. While the transfer of the law library to the new building would have remedied this, and not only enlarged the general usefulness of the Library but in every way served the public, the statute has withdrawn that question from practical consideration.

As an experiment, however, the law library was closed to students on the 1st of October and quarters assigned them in the new building. An alcove was set apart for 1,000 books, including elementary works desirable for students. This included every standard law text-book in the English language. As the Library possessed these duplicates, the integrity of the general collection was not invaded. In addition to law books which came through copyright, duplicates were added to the general collection, one copy going to the law department, the other retained at the service of the students. Should the readers desire other books than those in this junior collection, they can be obtained through the tunnel by application at the reading-room desk. Therefore, in the transfer from the Capitol to the general reading room, the students are assured of every convenience. The practical effect of this change has thus far been an advantage to the students as well as to the members of the bar. Under the former arrangement, the law library was available for a limited time each day and under deterrent conditions. Now the reader can study from 9 in the morning until 10 in the evening with the whole Library, the law as well as the other sections, at his command.

The success of the night service of the general Library leads to the question of likewise opening the law department. It would seem to be an inevitable consequence. In addition to the students, members of the bar in attendance upon the Supreme Court, or those who reside in the District, as well as members of Congress, would welcome the opportunity of preparing a brief at night. For work of this character the new Library presents many advantages, more especially if the law department were open and the tunnel in operation, as is the case when sessions of Congress are prolonged. The student would not only have access to the law department, but to the general Library. The question is commended to the attention of Congress to the end that should the tunnel run at night, the quarters now occupied by the law department should be improved in the way of light and ventilation.

A word of grateful recognition may be permitted as to the interest

taken in the development of the Library by the Chief Justice of the United States, who, by statute, shares in its administration. It should also be noted, as an undoubted oversight in the statute, that the Library is debarred from obtaining the Supreme Court Reports. For some years we have been dependent upon the grace of one of the Departments for those necessary volumes. When there was a "residue" of copies the Library was supplied, otherwise not. The courts have so multiplied that the "residue" is annually exhausted and the reports must be purchased. There is a bill before Congress contemplating a correction of this anomaly. And it would be well in this anticipated legislation if it were made mandatory upon the Public Printer, or whoever may have authority over official publications, to deposit two copies of each work coming from the Government press with the Librarian of Congress. We enjoy the privilege of two copies under the copyright law, and the rule should prevail as to such publications as the Reports of the Supreme Court.

The Library has not been insensible to the political questions which have marked our recent history and the desire on the part of Congress and those who use the Library for the amplest knowledge in regard to the regions which have come within the sphere of American influence.

With the advice of the Chief Justice, efforts have been made to obtain desirable legal works bearing upon those new problems.

The Librarian must likewise acknowledge the courtesy of the Secretary of State in enabling us to strengthen the Library in this regard, as well as that of the Bureau of American Republics, from whom we have received a circular of the recent laws governing South American countries. The Spanish and French colonial laws are cited in commonwealths which came into the Union from France, Mexico, and Spain; and so far as Spain is concerned, a knowledge of Spanish laws will be useful in the administration of newly acquired dominions.

Attention has also been given to the legislation of European countries engaged in colonization. The legislation and jurisprudence of our civilized Indian tribes are also sought, but thus far with only slight results.

The Librarian would respectfully renew his commendation of the law department to the special consideration of Congress. The Chief Justice is granted \$2,500 for the increase of the Library. Five thousand dollars should be given to enable this great Library to keep pace with law collections elsewhere. A study of the Library conditions, supported by expert testimony, justifies the belief that \$30,000 would be necessary to place the collection on an advanced and useful footing. If this expense is not deemed advisable, the annual appropriation of \$5,000 above recommended would enable us to strengthen our foreign reports, such as those of British America, South Africa, and Australia, together with treatises and periodicals on international law now in such urgent demand.

The Librarian would again call attention to the need of additional space for the law department. While the transfer of the students to the new building has been of practical benefit, there should be at least twice as much room as is now at the service of the bar. The shelving in its narrow and cribbed condition is so nearly filled that it will soon be necessary to once again keep the books on the floor. Relief would be found in giving over some of the space of what was the main room of the old Library. This is well lighted and near the Supreme Court. The room at present occupied, if vacated, could be usefully tenanted. If the law library remains where it is, then the entire collection should be gone over so as to reduce it in size, limiting it to practical books for the immediate

uses of judges and lawyers, and taking what remained over to the new building. There are, for instance, among the text-books several thousand volumes of old editions, useful simply for research. Many duplicates and bound periodicals could be stored away in the stacks of the general library, leaving in the Capitol only what is necessary for the lawyer in practice.

On Sunday, November 6, between the hours of 5 and 6 in the evening, an explosion occurred in the old part of the Capitol, near the entrance to the law library, which threatened the Library itself with irretrievable loss. The floor of the room where the law books of the Toner collection were kept was shattered and the furniture ruined. The books, however, sustained no injury, except what was caused by the sand in the concrete by the explosion. There was no fire in the room, and no water was thrown there. In the adjoining section of the library proper a large hole was blown in the floor. Through this the fire penetrated, and more than a thousand books were damaged. Of these none were destroyed, but about two hundred volumes were so damaged that they will have to be replaced, and the remainder must be rebound. The loss was confined mainly to text-books, and these can readily be replaced. The volumes belonging to Thomas Jefferson, a portion of that statesman's library as purchased by Congress, had been removed to the new Library building, with a view of gathering the collection in one room, and so escaped the fire. The loss of these books would have been irreparable. This accident will emphasize what has so often been said as to the danger of loss by fire. The explosion in the Capitol might have been almost a measureless calamity. The fact that it took place on a quiet Sunday afternoon, the library open only to attendants, prevented a loss of life. If the flames had not been arrested, the entire law library, the Supreme Court, and parts of the Capitol would have been destroyed.

This is the third accident which has befallen the Library in the Capitol. There was the burning in 1814, an act of war. Then came the fire of 1851, when most of the contents of the main Library were destroyed, the law library alone escaping because of its transfer to another room. This calamity resulted from carelessness, and it is feared the same judgment must be passed upon the incident of November 6, 1898.

To leave the law library, as well as so many other Government possessions of inestimable value now stored in perishable quarters, at the mercy of the neglect from which the Library alone has twice suffered, is a defiance of the pregnant lessons of experience. Why expose these treasures in buildings lined with wood, when the elementary instinct of prudence would place them under the fireproof shelter of the Library building until Congress erects the special building devoted to the judiciary?

THE PAVILION FOR THE BLIND.

Your Librarian, in his late report, referred to what has been done in regard to provision for the blind. The work was then experimental, but presenting assurances of success, which have been more than justified.

A pavilion in the northwest basement of the new Library building, outside of the range of visitors, was screened off and furnished. A small library, representative in its character, suitable for the blind, embracing books, periodicals, and music printed in raised letters, was obtained, partly by copyright, partly by purchase and gift. The various methods of print-

ing for the blind were included, and those who used the library were asked not only to name the volume they would read, but the style of raised letters preferred.

The library in raised letters is as follows:

Books.....	volumes..	219
Music.....	sheets..	50
Maps and charts.....	sheets..	40
Magazines.....	numbers..	78
Weeklies.....	numbers..	166

It may not be without interest to note the character of the works sought by the blind and at present in their library. In fiction we have Cervantes, Defoe, Goldsmith, Bulwer, Hawthorn, Thomas Nelson Page, Sir Walter Scott, Kipling, Thackeray, Dickens, the New Tales of American History by Senator Lodge and Theodore Roosevelt, Eggleston, Fenimore Cooper, Miss Alcott, and Miss Edgeworth. We have the poetry of Bryant, Holmes, Longfellow, Lowell, Whittier, and Moore. There are scientific writings by Tyndall and Proctor, Charles Nordhoff on Political Science, the writings of Ruskin, Emerson, Macaulay, Addison, Bunyan, and Swedenborg; the works of Homer, Virgil, Dante, and Shakespeare, as well as the music of Handel, Chopin, Mendelssohn, Schubert, and Beethoven.

It was deemed wise to give afternoon readings for the benefit of the blind, and the first was given on the 8th of November, 1897. It was believed that there might be one or two readings weekly, and this only for a time until the interest would pass away. On the contrary, the idea took root. From November 8, 1897, until October, 1898, there have been readings daily, Sunday excepted, with volunteer engagements to read several weeks ahead. Among those taking part in this graceful and beautiful work were authors of national fame, clergymen, prelates, professional men, and statesmen. As a rule the Library has been indebted to the ladies of Washington.

From November 4, 1897, to September 30, 1898, there were 479 blind readers.

Number of visitors who registered.....	2,910
Number of visitors in pavilion.....	6,767
Total.....	9,677

The interest aroused throughout the country by the success of this modest experiment in the Library of Congress is shown in the establishment of rooms similar to our pavilion in educational institutions in various parts of the Union, with daily readings.

THE ORDER DEPARTMENT.

Books are purchased for the Library upon the advice of those at the heads of the departments connected directly with the Library service, the judgment of the Librarian, and the desire, whenever possible to ascertain it, of Members of Congress. Every request for new books, whether on the part of those entitled to use the Library, or the general public, has immediate and, unless the request is frivolous, favorable consideration. The want of the every-day student is apt to have a high value as an expression of public opinion. An "order department" has been created, whose function is to purchase the books provided for by the appropriations of Congress. To avoid placing duplicate orders with the various agencies

of the Library at home and abroad, a card catalogue for orders has been adopted. These cards are useful as a permanent record, giving the history of each book which comes into the Library. When an order sheet is written from these cards, an estimate is made of the amount of the purchase. The buying of a duplicate rarely happens, and with the improvement of the official catalogue in the reading room will be impossible.

Books are prepared for accessioning in the order department, and all gifts are made a matter of record and acknowledgment. The work in this department has grown to such an extent, and its value as a check upon the disbursements of the Library so pronounced, that it will be necessary to strengthen it. The time of one assistant is largely taken up in the acceptance of gifts, and another is required for necessary details.

THE LIBRARY APPOINTMENTS.

The question of appointments in the Library under the reorganization was the subject of a resolution passed by the Senate December 17, 1897. In obedience to this resolution, a letter was addressed to the Vice-President showing that no nominations were made except upon information as to special library training and experience. This was gathered from conversations with those recommending applicants, general inquiry as to the character, ability, and education of the applicant, a study of papers presented as credentials, as well as from personal observation.

Reference was also made to the fact that in order to carry out the letter as well as the spirit of the law a board was named to examine the appointees. In the letter naming this board it was specified—

This inquiry will embrace fitness for library service, education, intellectual capacity, experience, manners, personal habits, and standing. The examinations will not be severe nor technical. We can not hope to have a staff of trained assistants in the junior branches of the service—such offices, for instance, as pay \$720 a year. In these minor offices there should be an elementary knowledge or training which could be perfected in our own library. The members of the board will therefore use their own judgment, and, noting that capacity which needs only experience and development, give the candidate an opportunity. In the higher branches of the service evidence of higher training should be expected.

This examination was made after careful preparation and the reports filed with the Librarian showing the exact standing of each appointee. Upon this report nominations on probation became permanent. To show the character of the examination and the sincerity of our efforts to appoint no one except as the law commanded, "by reason of special aptitude for the work of the Library," a list of some of the questions proposed to the candidates is submitted in the appendix.

It will be seen from this that, while the Library was outside of the classified service, the appointments rested with the Librarian, and all care was taken to insure a worthy and permanent staff. It was in acceptance of the justified wisdom of civil service that no removals have been made except for superannuation or in the Library interest. The scope of our examinations as recorded in the appendix will show our practical appreciation for civil service and the methods of its application to the Library. There have been no removals and no appointments for political reasons. Recommendations from whatever quarter have been received and considered as bearing upon the character and standing of the applicant. The question of fitness is decided after due inquiry and upon the rule laid down. Appointments hold good and promotions follow only as applicants maintain the record which led to their selection.

NIGHT OPENING.

The Joint Committee on the Library, through Senator Hansbrough, March 3, 1897, made a report "suggesting the advisability of such appropriations as may be necessary for the employment of an additional force, in order that the Library may be opened at night for the general public." This recommendation of the joint committee was approved by Congress and arrangements made by which the Library was opened from 9 in the morning until 10 in the evening. The opening at night was urged upon reasons of expediency. Note was taken of the conditions of Washington life—the large number of ladies and gentlemen in the public service, whose only opportunity of access to the Library being at night, were deprived of its advantages; the perfection of the arrangements in the new building for night service, the economy of the procedure, the misfortune of depriving our official class, as well as the citizens generally, from Library privileges, were all considered. It was also shown that not alone was the building closed to students who came to read, but to the people at large who came to see a noble building, rich in artistic beauty and splendor.

Congress directed the opening, and the results affirm the wisdom of its decree. In October the number of visitors to the reading room was 6,435, a daily average of 247. The largest evening attendance was 243, the smallest 152. The books called for were 11,003, a daily average of 423. The evening readers are mainly students. The character of the books they select shows that as a rule they read, with serious aims, history, science, military and naval works, and much pertaining to the Antilles, Manila, and Spain. Remembering, as has been wisely said, that there is no better university than a collection of books, the action of Congress throws open to the people the opportunity of a university education.

THE JUVENILE LIBRARY.

It has been deemed advisable to set apart a reading room for children. The Library does not admit those under 16 years to the reading room. It has seemed a hardship to deprive children at the outset of their lives of what may be a precious opportunity in the bending of the mind toward knowledge, and therefore the rule has had but lax enforcement. However, giving children their own room seems best for the general readers' interest. The lower floor adjoining the blind pavilion has therefore been set apart and will be opened as a "juvenile reading room" as soon as the furniture is arranged. Some 10,000 or 12,000 volumes suitable for children will be transferred to the shelves. While the rights of the elder readers are guaranteed, the children will have every advantage in their own way.

THE MAIL DEPARTMENT.

The creation of a mail and supply department, as noted in the last report, has proved an advantage. There is now a double mail service—one at 7.30 a. m., the other at 12 m., which has been maintained with regularity and efficiency.

During the year ended November 1, 1898, the department received 80,480 letters and 949 sacks containing books, magazines, periodicals, engravings, photographs, and various articles for distribution in the

Library, express packages to the number of 1,176, in addition to 40 large boxes, having been received during the year.

The facilities for sending books to the homes of Senators and Members have been improved. Since March 1, 1,620 packages have been thus delivered. This does not include the number of volumes.

Owing to the opening of the Library at night it may be necessary when Congress convenes to send books ordered by Senators and Members after 4 p. m. At present the book delivery closes at 4 o'clock and the mail wagon leaves the Library at 4.30 p. m., often not returning until 7.30 or 8 p. m. If experience shows that a later service is required by Congress, suitable arrangements will be made.

The tunnel and the carrier for the transport of books between the Capitol and Library building has been in use for over a year. The daily average of books carried through the tunnel at the last session of Congress was from 150 to 175. The number of books ordered from the law library has gradually increased since the transfer of the law students from the Capitol to the Library building.

MINOR GOVERNMENT LIBRARIES.

In a previous report reference was made to the libraries belonging to the Government in the District of Columbia. Exclusive of ours, these number 36, and are estimated as containing 876,746 volumes, 446,300 pamphlets, 57,975 maps and manuscripts. Many of these are special collections—some of them unsurpassed—notably the Surgeon-General's library, so complete in contents, catalogue, and administration. Other scientific collections of importance are those of the Naval Observatory, Patent Office, Geological Survey, Coast Survey, National Museum, Fish Commission, Bureau of Ethnology, and Weather Bureau.

The Executive Departments, as well as the Senate and House of Representatives, have their own libraries. That of the State Department, with its manuscripts and works on history, diplomacy, and international law, is important. The War and Navy Departments have general libraries of value, and special libraries in their several divisions. The Department of Agriculture has a useful, well-administered, and progressive collection of books. The Department of Justice, the Bureau of Education, the Department of Labor, and, in fact, every department or bureau, has gradually accumulated a series of books more or less adapted to its needs. While the fact is recognized that both for scientific and administrative purposes such special libraries are a necessity, it is believed that the entire library work of the Government should be carried on under some sort of general cooperation. For the past five years an association of librarians in Washington, composed largely of persons connected with Government institutions, has done much toward bringing about useful and practical relations among the libraries. This should find formal expression in a uniform system of cataloguing, and in the requirement that a duplicate copy of each card made in any library belonging to the Government should be sent to the Library of Congress, where a central catalogue would always be maintained.

These special and distinct libraries, thus dependent upon Government support, are in fact a part of "the national library," and their contents should be accessible to the students, as would be the case with a general catalogue. These minor libraries, however, should not be developed at the expense of the Library of Congress. In our new Library building

we have room for 4,500,000 volumes. Here should be the national library of reference. To build minor libraries within its range weakens its influence, diverts resources that could be devoted to its enlargement, and leads to a process of disintegration. Under other conditions, when the Library of Congress was cramped into a space not large enough for one-fourth its requirements, the creation of minor libraries was inevitable. That necessity no longer exists. The Government, inclusive of our own collection, owns in the Capitol at least 1,700,000 volumes, and it should be the aim of Congress to centralize these collections and give the public the advantage of convenient access. To that end there could be no more useful contribution to the cause of universal knowledge than a general catalogue of all libraries enjoying Government support.

THE DURABILITY OF PAPER.

The attention of Congress has been called to the questionable quality of the paper upon which so much of the Library material is printed. The same criticism may apply to the paper used in other forms of Government records, although with that we have only a minor concern. The deleterious process in the making of modern paper, arising especially from cheapness, and the wood pulp and chemicals used, in the interests of economy, destroy its texture and durability. We have in our Library printed journals going back to the time of Charles II, over 230 years old, the paper as staunch, the ink as clear, as when they came from the press. Under modern conditions of paper manufacture, the press sending forth from day to day so much that is perishable—newspapers crumbling in the readers' hands—the question may well arise, as affecting not only our own, but all modern libraries, as to how much of our collections will become useless because of the deterioration and disintegration of the paper used in the cheaper forms of literature.

The Prussian Government having taken up the question, so far as it affected the integrity of German records, the Library has been enabled, through the kindness of our American embassy in Berlin, to obtain a copy of the Prussian regulations.

An abstract appears in the appendix.

While this important question might readily come under Government control, nothing being more essential than the physical integrity of the national archives, so far as the Library is concerned a remedy could be found under the operation of the copyright law. An amendment that no copyright should issue until articles in printed form should be printed on paper of a fixed grade would remedy the evil, so far as the important libraries are concerned. There would be no trouble to the publisher beyond the cost of a few special sheets of paper and a slight delay in the presswork; and when the value of the franchise involved in a copyright is remembered the guaranty thus exacted as to the quality of the paper would be slight return for the privilege. Extra cost of those special sheets would be cheerfully borne by the libraries, and in the end become to the publisher a profit rather than a loss.

RECAPITULATION.

As will be seen from the report, there have been received in the Library of Congress during the year 31,304 printed books. These do not include those transmitted from the old Library, but are distinct accessions by

purchase, exchange, copyright, and gifts. To this may be added an increase of 8,632 in pamphlets. The department of graphic arts shows a valuable increase. There are 22,495 more maps and charts than were reported last year. This does not imply distinct acquisition, but transfers from the old Library of material long dormant, but now in active service. We have added 5,812 periodicals, 1,087 bound volumes of newspapers, and 4,055 law books. The increase of 10,848 pieces of music is notable, as showing the advance in that interesting branch of the Library. In material accessions the Library shows a marked gain over last year. And in this it is well to see that we keep pace not alone with the nation's advance in literature and art, but with its business prosperity. The war with Spain was a drawback, as no interest is more affected by the sacrifices and uncertainties of war than what is represented in a library.

For these and other reasons, especially as expressed in the copyright department, there is every reason why the Library should have the special consideration of Congress and the country. The copyright department is not alone one of the most necessary of the Government establishments, but a revenue to the Treasury as well—the Library owing to it a large part of its accretions, the Treasury an assured income. It requires careful and minute administration, for it guarantees protection to every American writer, as well as to others who come within the provisions of international copyright.

In the highest sense the Library is the home of research. The capital can never be other than the center of library work. Here on Capitol Hill must be found the national treasure-house of knowledge. In addition to the Library of Congress there are in Washington thirty-six minor libraries, aggregating 876,746 volumes. Therefore, with what we possess, not alone as the leading library of the United States, but as the center of a unique and varied library system in touch with every phase of obtainable knowledge, it should be our aim to broaden the Library, safeguard its integrity as a library of reference, and bring it home to the people as belonging to them—a part of their heritage—to make it American in the highest sense, seeking whatever illustrates American history—the varied forms of American growth, theology, superstition, commonwealth building, jurisprudence, peace, and war. And, while accepting this as the chief end of the Library, it is no less incumbent to seek out and gather in the learning and piety of every age. With the considerate care of Congress and a due appreciation of what has been done and what may so readily be done by the American people, there is no reason why the Library of Congress should not rival those noble establishments of the Old World, whose treasures are a people's pride and whose growth is the highest achievement of modern civilization.

JOHN RUSSELL YOUNG,
Librarian of Congress.

HON. GARRET A. HOBART,
Vice-President.

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